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ABSTRACT

A study of City University of New York (CUNY) career graduates was conducted in 1981-82 to identify variables relating to the length of time taken by students to complete 2-year career programs and attain associate degrees. The study, which focused on business, health technology, and engineering technology graduates, utilized survey and transcript data from 1,370 of the 9,000 June 1981 graduates who were sampled; transcripts from a random sample of 20% of the 1980-81 graduates at five CUNY colleges; and 25 randomly selected transcripts from cohorts who were first-time enrollees at four CUNY colleges in fall 1976, 1977, and 1978. Transcripts and surveys were used to identify personal and demographic characteristics, academic variables, sources of financial support, and college-life satisfaction. Study findings included the following: (1) 33.1% of the 308 responding business graduates completed their degrees within 2 years, 33.4% took an additional year, and 13.6% 2 extra years; (2) 23.8% of the 252 responding graduates of health-related programs graduated on time, 39.3% took 1 extra year, and 17.9% took 2 additional years; and (3) 20.0% of the 101 responding engineering graduates completed on time and 25.7% took an additional year. The study report includes tables showing length of enrollment for each subject area by personal, academic, financial, and satisfaction variables. The questionnaire and supplementary data tables are appended. (HB)

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RECENT GRADUATES: A STUDY OF GRADUATION
RATES AND DISTINGUISHING CHARACTERISTICS OF CUNY
COMMUNITY COLLEGE CAREER PROGRAM COMPLETERS

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in Occupational Education

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The Graduate School and University Center
of the City University of New York

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FOREWARD

For several years, the Institute for Research and Development in Occupational Education (IRDOE) has been investigating various aspects of the community college population and college offerings. In this year's undertaking, rates of completion of career program graduates in the City University of New York community colleges were studied by major field within and across institutions. A presumption was that, if characteristics of on-time completers and those individuals who take four or more years to complete a "two-year program" could be identified, administrators and faculties could maximize the success potential of students in various career programs.

June 1981 graduates of A.S. and A.A.S. programs in the business-related, health-related, and engineering technologies curriculums, together with cohorts who entered those programs in 1976, 1977, and 1978, were compared by program and by the number of years that elapsed between date of first enrollment and graduation. The findings have yielded some answers and raised some associated questions. For example, the need to work while attending school, a variable common to many of the delayed-graduation groups, is not an unexpected concomitant for individuals who are heads of households. What accommodations, then, have been or can be made in attempting to attract this more mature student population?

Readers will be challenged by the data and by some of the conclusions. As always, IRDOE welcomes correspondence from those whose experiences and/or personal research can contribute to knowledge and understanding of the problems and solutions.

Lee Cohen, Ph.D.
Director, IRDOE

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I would like to thank the following people for their interest in this project and for the administrative support they provided: Mike Van Ryn, Director, and Lawrence E. Gray of the New York State Education Department's Bureau of Grants Administration; Dr. Bert Flugman, Acting Director of the CUNY Center for Advanced Study in Education; and Dr. Lee Cohen, Director of the CASE Institute for Research and Development in Occupational Education.

This study would not have been possible without the cooperation--indeed, the actual contributions of Dr. Barry Kaufman, University Associate Dean, Office of Institutional Research and Analysis, the City University of New York; and Dr. James Murtha, Senior Researcher, also of OIRA. Without their active intervention, guidance, and willingness to assume all the burdens of the questionnaire survey--and graciousness in sharing the results--we would have been hard pressed to complete this study, and in as timely a fashion.

The generosity with which the Registrars of the colleges from which I needed data responded to my requests was singular. I would like to especially acknowledge Mr. Robert Goldstein, Registrar of CUNY's Graduate School and University Center. It was through his efforts that I was able to rely on Kenneth Rofano, Registrar, New York City Technical College; Herbert Chusid, Senior Registrar, Kingsborough Community College; David McAuly, Senior Registrar, Queensborough Community College; Elaine Bowden, Director of the Registrar's Office, the College of Staten Island; and Robert O'Pray, Senior Registrar, LaGuardia Community College.

The data analysis services of Frank O'Dowd and of Bill Protash (both from OIRA) should be noted. I am particularly thankful of the fastidiousness and perseverance with which Ms. Cheryl L. Johnson and Dr. John Rashford undertook the confusing and tedious task of coding and analyzing more than 500 student transcripts. I am also grateful for the input of Mara Zibrin and of my other colleagues for their aid in designing the research and in helping in its interpretation. Several people read the manuscript in each of its many versions--all of which were typed by Lucille Mascetti and Vivian Nelson--and I hope this document reflects their many good suggestions and advice.

Barbara R. Heller
Project Director

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RECENT GRADUATES: A Study of Graduation Rates and Distinguishing
Characteristics of CUNY Community College Career Program Completers

OVERVIEW

This report describes a research project conducted by the CASE Institute for Research and Development in Occupational Education (IRDOE) during the period December 1981 through September 1982. Funded by the New York State Education Department, Bureau of Grants Administration,¹ the study was executed in cooperation with the City University of New York's Office of Institutional Research and Analysis (OIRA).

Using questionnaire data supplemented with information derived from transcripts, this investigation sought to identify variables that relate to the length of time taken by students to complete two-year career programs and earn A.S./A.A.S. degrees from the community colleges comprising the City University of New York (CUNY). The basic sample included students who were graduated in June of 1981 with degrees in business (excluding secretarial science), health technologies, and engineering technologies, as defined by HEGIS codes; their academic progress was reviewed retrospectively. In addition, select data was available for a sample of cohorts: students who were first-time enrollees in these same curricula in the Fall 1976, Fall 1977, and Fall 1978; their progress toward graduation provided a different perspective.

The results suggest fairly distinct patterns of work and education that are associated with the number of years elapsing between first enrollment and graduation. Also apparent are few curriculum to curriculum differences in completion rate or in factors associated with graduation. The data indicate that, typically, career program students persist with their education, with their rate of progress largely determined by external life factors--principally financial need--not easily amenable to institutional programs of redress.

BACKGROUND

This research project focused on the important issue of completion of community college career programs. Its primary purpose was to detail the characteristics of students and/or of programs that relate to high rates of

¹Project VEA #53-82-0288

completion and to on-time (vs. delayed) graduation. In particular, we were interested in ascertaining why large numbers of CUNY career program students take more than two years--and some as many as four or more years beyond the prescribed two--to finish their education, and why some never do so.

Descriptions of the student/program characteristics that determine completion and delayed graduation is vital to understanding the actual costs of a community college education and the impact of its programs. As public institutions, CUNY (and SUNY) community colleges represent a public investment in education that is grounded in the belief that higher education leads to greater productivity in the marketplace and greater personal satisfaction and fulfillment. Through such diverse mechanisms as financial aid and laws governing compulsory school attendance, our society invests in education largely (but not exclusively) because higher education enhances the value of human capital: people with better skills/higher levels of education generate more income and their higher earnings translate into more tax dollars and improved standards of living.

This formulation is especially relevant to two-year college career programs which were ostensibly designed to satisfy human resource needs in the local community. In these occupational programs, the return on the public investment can be directly assessed by the number of people who complete a program of study, who are well-trained, who work at careers related to their studies, and whose subsequent earnings compensate for the cost of education plus the income they have forgone during their years of training.

In assessing what the public is getting for its investment in occupational education at the postsecondary level, it is necessary to know how many years are actually spent in school. This study examined this question for each of three curricula, thus enabling us to compare and contrast completion rates among different fields. Its major purpose was to characterize differences among students/programs who complete their associate degree requirements, but at different rates of speed. It was anticipated that descriptive accounts of the factors that relate to progress would not only provide baseline data needed to understand educational costs and benefits, but also suggest actions that could accelerate the rate of completion. By identifying programs, points in the progress of students, and/or characteristics of likely completers, policy makers would be able to reallocate resources, or effect other appropriate modifications in the format and/or delivery of instructional and/or support services to help insure that a larger proportion of students graduate--and in fewer years.

DESIGN

As its overall goal, this project sought to ascertain the rates of completion for different groups of CUNY career program graduates and to describe the variables associated with differential rates. The original proposal, to sample students who graduated in each of three years to see if the results stood up over time, was modified as a consequence of our collaboration with the CUNY Office of Institutional Research and Analysis (OIRA): during our project year, OIRA was also conducting a survey of June 1981 community college graduates (to meet the data requirements of the Occupational Educational Data System of the New York State Education Department), had just completed a survey of June 1980 community college graduates and, moreover, was planning to survey 1981-82 graduates the next year.

STUDY SAMPLE

To avoid duplication of effort as well as to decrease the burden on the 1981 target group (and thus increase the likelihood that they would respond to some one query), the present study focused on June 1981 CUNY graduates from each of three broad curricula--business, (excluding secretarial science), health technology, and engineering technology. OIRA agreed to survey all (rather than a systematic random sample) June 1981 program graduates of these three programs of study, adding to their questionnaire some of the information relevant to our investigation.

The OIRA project, also initiated at the request of the State Education Department, was part of a larger, three-year investigation. The general purpose was to collect data pertaining to graduates of vocational education programs to better understand the connection between higher education and the urban labor market, and a description of the overall study plan can be found in a report by the Office of Institutional Research and Analysis, The City University of New York (SED # 31 0000 28 3020, VEA # 53-82-9005). While the IRDOE project was conceived of differently, and was to examine different issues, there was a great deal of overlap in the study population, in the intended methodology, and in the kind of information sought. Since OIRA had easier access to lists of graduates and larger and more automated data-processing facilities, their staff assumed responsibility for administering the questionnaire and for the followup of nonrespondents.

The initial mailing in the Spring 1982 was to more than 9,000 June 1981 graduates (baccalaureate and associate degree). Second and third wave mailings to nonrespondents were also conducted. The overall effective response rate was 47.7 percent. Responses were obtained from 1,370 people who graduated in June 1981 with associate degrees--34 percent of those surveyed.

The survey questionnaire was largely developed by OIRA, with some input from project staff.¹ Space limited the kinds and number of items, since the questionnaire also had to reflect the informational needs of the New York State Education Department as well as be compatible with the data OIRA had collected on the 1980 graduates.

To supplement the questionnaire information, we turned to an examination of student transcripts. Working directly through the Registrars of the five CUNY Community Colleges offering degrees in programs in which we were interested (see below), we requested the following transcripts:

(1) a 10 percent random sample of 1980-81 graduates from

- New York City Technical College (10% business-related, 10% health-related, plus 10% engineering technology student transcripts);
- Kingsborough Community College (10% of graduates of business-related curricula),
- Queensborough Community College (10% of business graduates, 10% of graduates of health-related technologies, plus 10% of the graduates of the engineering technologies);
- The College of Staten Island (10% of the health-related plus 10% of the engineering technology graduates); and
- LaGuardia Community College (10% of their business-related graduates).

(2) twenty-five (25) transcripts, randomly selected, of cohorts who were first-time enrollees in the Fall 1976, Fall 1977, Fall 1978 (for a total of 75 transcripts from each college/each program) from

- New York City Technical College business-related programs (N=75--25 for each year); and engineering technologies (N=75);
- Kingsborough Community College business-related programs (N=75);
- Queensborough Community College health programs (N=75) and engineering curricula (N=75); and
- The College of Staten Island health-related curricula (N=75--25 (first-time matriculants in Fall 1976, 1977, and 1978).

¹A copy of the questionnaire items is appended; see Appendix A.

Thus, for June 1981 graduates we had both transcript and questionnaire data, although not for identical individuals. For cohorts (first-time enrollees in 1976, 1977, and 1978), we had information from official transcripts. The June 1981 graduates' sample allowed for a retrospective look at students entering the system in different years, while the sample of Fall 1976, 1977 and 1978 entrants permitted a comparable analysis of flow-through rates of the most probable entering cohorts. (Note that the cohorts' samples do not consider date(s) of graduation.)

DATA ANALYSIS

OIRA conducted the preliminary analyses of the questionnaire data, providing us with frequencies, percentages, and means and standard deviations; additional comparisons were performed by project staff.

Transcripts presented IRDOE staff with unique problems--college-to-college differences in notation and in type of information recorded, incomplete and inconsistent entries, and poor quality of reproduction affecting the legibility of records--that required decisions about what to include and in what form. The lack of standardization of these records precluded several interesting and perhaps illuminating comparisons. However, an attempt was made to systematize the coding process and, to this end, only select data were examined, a manual was developed, and each transcript was coded and independently checked.

Transcripts were analyzed by hand. Not all available information was tabulated, but rather we focused on highlighting patterns of college attendance and performance. Thus, for example, we did not attend to enrollment in particular courses, but did record the number of courses taken, passed, failed, or withdrawn from--variables that we believed related to on-time graduation.

All data, questionnaire responses and academic records, are available on a college-to-college basis. However, only summary data by program of study across colleges is presented below.

RESULTS

In this section we first discuss the number of returns. Then we present, in turn, the findings for business-related, health-related, and engineering technologies program students. For each of these three broad curricular areas, we provide data (questionnaire and academic records) pertaining to the June 1981 graduates, contrasting their performance with that of the cohorts. In interpret-

ing the findings, it is important to keep the ideal rate of progress through the community college system in mind: "on-time" graduation is the equivalent of four semesters; thus, students who were first-time matriculants in the Fall 1979 and who graduated in June 1981 can be defined as "on-time" completers. All students entering the system before the Fall 1979 semester, but graduating in June 1981, are "delayed" graduates. The following presents this pictorially.

June 1981 graduates, starting in:

Fall 1979 = on-time graduates (in college for four semesters)		
Fall 1978 = plus 2 semesters	} .	one year
Fall 1977 = plus 4 semesters		two-year
Fall 1976 = plus 6 semesters		three-year

} delayed graduates

(Because almost half (45.7%) of associate-degree students take three or more additional semesters to graduate from the time of first enrollment (and an additional 25.7% take "plus-two" semesters), going back to the Fall 1976--plus-six semesters--meant that we sampled almost all entering cohorts.)¹

RESPONDENT SAMPLE

The questionnaire elicited a total of 1,370 returns overall. There were returns from a total of 308 graduates with associate degrees in business-related curricula; usable questionnaires were also received from 252 graduates of the health-related programs, and from 101 students awarded degrees in the engineering technologies. Table 1 on the following page shows the dates of first-time enrollment (self-reported) for these questionnaire respondents, and also the number of transcripts that were analyzed for the June 1981 Graduates and entering cohort groups by program of study.

OIRA reports that with the exception of the sex of the graduate (women being more likely than men to respond to the questionnaire), there were no significant variations in demographic or economic characteristics of respondents as compared with the total population surveyed. Thus, there is reason to believe that the curricular subgroups also represent the populations of graduates in these programs. However, there were some differences in response rate by curriculum:

¹Kaufman, B., Murtha, J., and J. Warman. Outcomes of Educational Opportunities: A Study of Graduates from the City University. The City University of New York, Office of the Deputy Chancellor, Institutional Research and Analysis, October 1981.

TABLE 1

Questionnaire Response Rate and Number of Transcripts
by Date of First-Time Matriculation, by Curriculum

Source/Number of Responses	BUSINESS		HEALTH		ENGINEERING	
	N	%	N	%	N	%
<u>June 1981 Graduates-</u> <u>Questionnaire by</u>						
<u>Date of Entry:</u>						
Sp. 76 or before	47	15.3	27	10.7	14	13.9
Fall 76-Sp. 77	17	5.5	21	8.3	4	4.0
Fall 77-Sp. 78	42	13.6	45	17.9	19	18.7
Fall 78-Sp. 79	103	33.5	99	39.3	43	42.6
Fall 79 or later	99	32.1	60	23.8	21	20.8
TOTAL	308	100.0	252	100.0	101	100.0
<u>June 1981 Graduates-</u> <u>Transcripts by</u>						
<u>Date of Entry:</u>						
Fall 1976 or before	9	10.7	7	11.7	11	31.4
Fall 1977	12	14.3	21	35.0	8	22.9
Fall 1978	32	38.1	23	38.3	9	25.7
Fall 1979 or Later	31	36.9	9	15.0	7	20.0
TOTAL (10% sample requested)	84	100.0	60	100.0	35	100.0
<u>Cohort -</u> <u>Transcripts by</u>						
<u>Date of Entry:</u>						
Fall 1976	46	92.0 ^a	29	58.0	45	90.0 ^a
Fall 1977	45	90.0	30	60.0	40	80.0
Fall 1978	36	72.0	30	60.0	29	58.0
TOTAL	127	84.7	89	59.3	114	76.0
^a Expressed as percentage of the 50 transcripts requested in each curriculum in each year.						

for example, when the date of entry is considered, Table 1 shows that more on-time business students than health or engineering graduates completed the survey.

Table 1 also shows, based on transcripts, how a sample of June 1981 graduates was distributed by date of initial enrollment into the CUNY community college system. First, since the totals represent a 10 percent sample of graduates (as requested of Registrars), it is apparent that business programs graduate proportionately more students than do health or engineering technology ones. It is also apparent from these data that there are rather dramatic differences among programs that relate to how long students take to graduate. Approximately 40 percent (36.9%) of business students graduate on-time, with another 40 percent (38.1%) requiring only an additional two semesters; in marked contrast are the engineering technology students, only 45.7 percent of whom graduated on-time (20.0%) or in plus-two semesters (25.7%).

In addition to the 179 transcripts of June 1981 graduates that were examined, 330 transcripts of students who were first-time matriculants in the Fall 1976, 1977, and 1978 were also studied. (Hereafter, these are referred to as cohort groups.) As Table 1 (page 7) shows, of the 150 cohort transcripts requested for each curriculum (50 for each year), we obtained about 85 percent, 59 percent, and 75 percent usable records pertaining to business, health, and engineering technology students, respectively. (The two colleges from which health students' records were requested were unable to produce, for indeterminate reasons, the sample transcripts.)

In general, both the rate of return of questionnaires and the acquisition of transcripts is high and probably fairly representative of the populations from which they were drawn. Because of the selection criteria employed, the graduates' transcripts probably do not suffer from any "response" bias, but since the cohort sets are less complete than requested, they are less random and, therefore, less representative of the entering class(es) than the entire random sample would have provided. For this reason, and because of the small Ns, some caution should be exercised in extrapolating from the findings.

BUSINESS-RELATED CAREER PROGRAM STUDENTS

In this section we first examine the questionnaire data for the June 1981 community college graduates with associate degrees in the business-related curricula. This is followed by a discussion of their academic progress as determined from transcripts. Next we compare the performance of June 1981 graduates with the entering cohort groups.

Experiences of June 1981 graduates. Table 2-6 summarizes questionnaire respondents' reports of their experiences in community college, their subsequent schooling and work activities, and their opinions about the quality of services provided by the two-year colleges. All data is reported separately for on-time graduates (those who enrolled for the first time in the Fall 1979, or later) and for students who took longer than the prescribed two-years--"delayed" graduates: those who first enrolled in Fall 1978 (plus-one year), Fall 1979 (plus-two years), Fall 1976 (plus-three years), or earlier (plus-four or more years)¹. Presenting the data in this fashion allows us to contrast and profile variables that relate to rate of progress.

Before turning to the detailed findings, of the total of 308 business program graduates who responded to the questionnaire, 99 (33.1%) were on-time graduates. Another third (33.4%) took one additional year to complete their degree requirements, while the remainder spent even more time in college: 42 (13.6%), plus-two (extra) years; 17 (5.5%), plus-three years; and 47 (15.3%) who took four or more years to complete the 60 credits for the associate degree.

¹These "delayed" graduate groups should not be confused with the cohort groups. "Delayed graduates" describe students who completed their associate degree requirements and who were awarded a diploma in June 1981 but who started their community college education more than two years prior to the date of graduation; delayed graduates started college in the same years as did the cohorts, some--but not all--of whom may also have graduated in June 1981, or before.

Table 2 on page 11 (and part of Table 3, page 13) describes the respondents as they were at the time the questionnaire was administered (about one year after graduation) and as they reported themselves to be during their college years. As can be seen, there are some differences between on-time graduates and delayed graduates. For example, males are represented in greater proportions among on-time graduates and among those in college plus-one (i.e., one extra) year than among those in school longer. (One way of interpreting this is that fewer women than men students pursuing a business program complete their degree requirements on-time; in other words, women take longer to graduate.) A similar pattern prevails for marital status; here, "singleness" seems to be associated with taking fewer years to complete schooling, suggesting that family responsibilities retard educational progress.

Substantiation for this is evident when one compares the dependent children of on-time and delayed graduates. Additional confirmation is that although there is virtually no relationship between the amount of time to graduation and family income level (see Table 3), the definition of which "family income" was reported (that of self or spouse vs. parents or guardian) shows a faster completion rate for respondents who reported parent-family income. In other words, parent-family is positively associated with on-time or closer-to-time graduation. The presumption is that most people reporting parent income were living at home as dependent children themselves (rather than living in their own homes as heads of household). Again, these data suggest that own-family (i.e., marital) responsibilities delay graduation.

The data in Table 2 are not clear with respect to the relationship between completion rate and graduates' ethnicity, religious preference, or immigrant status. However, there is some suggestion that delayed graduation is more likely for Catholics and Protestants, Hispanic and Puerto Rican persons, and for graduates who migrated to the United States either alone or together with one or both parents.

Parents' education appears to relate to the length of time students spend in college: higher levels of schooling, of both mothers and fathers,

TABLE 2

Self-Reported Background Characteristics of On-Time and Delayed June 1981
Graduates with Associate Degrees in Business Curricula

DEMOGRAPHIC VARIABLES	Plus- four + (N=47)		Plus- three (N=17)		Plus- two (N=42)		Plus- one (N=103)		On-Time (N=99)		TOTAL BUSINESS (N=308)
	N	%	N	%	N	%	N	%	N	%	%
Sex: Male	18	38.3	6	35.3	14	33.3	46	44.7	49	49.5	43.7
Current Marital Status:											
Single	17	36.2	5	29.4	27	65.9	73	70.9	79	79.8	65.2
Sep/Div/Wid.	8	17.0	4	23.5	7	17.1	13	12.7	7	7.1	12.6
Married	22	46.8	8	47.1	7	17.1	17	16.5	13	13.1	22.3
No. Dependent Children											
None	27	57.4	9	52.9	30	73.2	70	68.0	76	78.4	69.5
One/two	16	34.0	7	41.1	9	21.9	24	23.3	13	13.4	22.7
Three/four	4	8.5	1	5.9	2	4.8	5	4.9	7	7.2	6.2
Five or more	0	-	0	-	0	-	4	3.9	1	1.0	1.6
Ethnicity:											
Puerto Rican	5	10.6	1	5.9	2	4.9	8	7.8	5	5.1	6.8
Other Hispanic	1	2.1	4	23.5	6	14.6	10	9.7	7	7.1	9.0
Black	10	21.3	3	17.6	14	34.1	34	33.0	17	17.2	25.2
White	31	66.0	7	41.2	17	41.5	44	42.7	65	65.7	53.9
Other	0	-	2	11.8	2	4.9	7	6.8	5	5.0	5.1
Immigrant Status:											
None immigrant	30	65.2	6	35.3	17	40.5	50	48.5	61	62.2	53.7
Self/self & parents	10	21.7	8	47.0	17	40.5	36	35.0	16	16.3	28.5
One/both parents	6	13.0	3	17.6	8	19.0	17	16.5	21	21.4	17.8
Religious Preference:											
Catholic	28	63.6	9	56.3	16	41.0	44	45.4	51	54.8	51.7
Protestant	10	22.7	1	6.3	9	23.1	21	21.6	17	18.3	19.9
Jewish	2	4.5	1	6.3	4	10.3	9	9.3	11	11.8	9.2
No preference	3	6.8	4	25.0	7	17.9	9	9.3	13	14.0	12.3
Other	1	2.3	1	6.3	3	7.7	14	14.4	1	1.1	6.8
Handicapping Condition:											
Yes	1	2.1	1	5.9	3	7.1	6	5.8	1	1.0	3.9
Father's Education:											
8th grade or less	14	31.8	3	18.8	11	27.5	23	23.7	19	20.0	23.8
Some h.s.	5	11.4	4	25.0	7	17.5	22	22.7	11	11.6	16.7
H.S. graduate	14	31.8	6	37.5	9	22.5	27	27.8	28	29.5	28.9
Some college	2	4.5	1	6.3	6	15.0	6	6.2	18	18.9	11.2
Coll. graduate	2	4.5	2	12.5	3	7.5	5	5.2	10	10.5	7.5
Postgrad/Professional	0	-	0	-	3	7.5	4	4.1	6	6.3	4.4
Don't know	7	15.9	0	-	1	2.5	10	10.3	3	3.2	7.5
Mother's Education:											
8th grade or less	12	25.5	4	23.5	12	28.6	26	25.5	18	18.4	23.6
Some h.s.	6	12.8	7	41.2	6	14.3	21	20.6	12	12.2	17.2
H.S. graduate	17	36.2	5	29.4	14	33.3	30	29.4	43	43.9	35.3
Some college	8	17.0	0	-	4	9.5	7	6.9	12	12.2	10.0
Coll. graduate	1	2.1	1	5.9	3	7.1	10	9.8	9	9.2	7.8
Postgrad/Professional	0	-	0	-	2	4.8	1	1.0	3	3.1	1.9
Don't know	3	6.4	0	-	1	2.4	7	6.9	1	1.0	4.2
Language at "Home"											
Eng. only	36	76.6	10	58.8	26	61.9	71	68.9	70	70.7	69.1
Eng. plus	11	23.4	2	11.8	10	23.8	20	19.4	25	25.3	22.2
Another	0	-	5	29.4	6	14.3	12	11.7	4	4.0	8.7

is more usual among on-time business graduates. As conjecture, it may be that people who have more of a personal investment in school themselves motivate or otherwise support other family members to complete college speedily.

Table 3, page 13, also contains information about business graduates' college experiences. Thus, for example, it shows that most graduates--8 out of 10--did not attend any other college before enrolling in the two-year institution from which they graduated--and this does not vary with length of time to completion. The other items, however, do differ for groups entering college in the different years. The shorter the period of time spent in college, the more likely it is that the first semester was devoted to full-time study (Table 3, "First enrollment") and that thereafter enrollment was on a full-time basis (Table 3, "Enrollment Pattern") with no interruptions in this pattern ("Interrupted Study"). Attending regularly and taking a full course load are, of course, the obvious determinants of why some people complete a program of study in the designated period of time and why others do not.

The primary reason for not attending school on a full-time basis semester after semester generally relates to the need to work and/or to the desire for work experience. As can be seen in Table 3, there is such a relationship between full- and part-time work and number of years in school. Thus, proportionately more on-time graduates worked "mostly part-time" or "occasionally" during their education, in contrast to delayed graduates, more of whom worked "mostly full-time" (Table 3, "Employment pattern"). Interestingly, a somewhat larger proportion of on-time graduates reported that they did not work at all ("not employed"), supporting the hypothesis that they were primarily supported by parents--irrespective of the fact that the parent income level may have been no greater than that of a family headed by self or spouse.

Also in the expected direction is the relation between completion of course work and change(s) in major: a greater proportion of on-time graduates as compared with delayed graduates reported no change in their program of study; the longer the delay, the greater the proportion of respondents who changed their major to a business program.

The match between current job and the curriculum studied in college is

TABLE 3

Self-Reported Demographic Attributes and College-Going Experiences of On-Time and Delayed June 1981 Graduates with Associate Degrees in Business Curricula

COLLEGE-GOING VARIABLES	Plus-Four+ (N=47)		Plus-Three (N=17)		Plus-Two (N=42)		Plus-One (N=103)		On-Time (N=99)		TOTAL BUSINESS (N=308)
	N	%	N	%	N	%	N	%	N	%	
AT CUNY, "Family" Income											
\$4,000/	2	4.7	2	12.5	2	5.1	12	11.9	4	4.3	7.4
4,000-7,999	1	2.3	0	-	9	23.1	16	15.8	12	12.8	12.8
8,000-11,999	4	9.3	1	6.3	12	30.8	12	11.9	11	11.7	13.9
12,000-15,999	6	14.0	5	31.3	3	7.7	15	14.9	14	14.9	14.5
16,000-19,999	6	14.0	1	6.3	4	10.3	17	16.8	17	18.1	15.2
20,000-23,999	5	11.6	1	6.3	3	7.7	10	9.9	8	8.5	9.8
24,000-27,999	2	4.7	0	-	1	2.6	3	3.0	11	11.7	5.7
28,000-31,999	7	16.3	4	25.0	1	2.6	8	7.9	2	2.1	7.4
\$32,000/	10	23.3	2	12.5	4	10.3	8	7.9	15	16.0	13.2
"Family" defined:											
Parents	12	29.3	6	37.5	20	51.3	59	59.6	72	77.4	58.8
Self/Spouse	29	70.7	10	62.5	19	48.7	46	40.4	21	22.6	40.9
Attend College before:											
No	39	83.0	13	76.5	32	76.2	84	82.4	80	81.6	80.9
Yes, CUNY	3	6.4	3	17.6	5	11.9	9	8.8	11	11.2	10.0
Yes, non-CUNY	5	10.6	1	5.9	5	11.9	9	8.8	7	7.1	9.1
First-enrollment:											
Full-time	11	23.4	9	52.9	33	78.6	83	80.6	91	91.9	73.3
Part-time	36	76.6	8	47.1	9	21.4	20	19.4	8	8.1	26.7
Enrollment Pattern:											
Only full-time	1	2.1	2	11.8	18	42.9	68	66.0	73	73.7	52.1
Mostly full-time	4	8.5	2	11.8	13	31.0	24	23.3	17	17.2	19.9
Half full-time	11	23.4	4	23.5	4	9.5	3	2.9	4	4.0	8.4
Mostly part-time	8	17.0	5	29.4	5	11.9	3	2.9	1	1.0	7.1
Only part-time	23	48.9	4	23.5	2	4.8	5	4.9	4	4.0	12.5
Interrupted Study:											
No	14	29.8	8	47.1	22	52.4	84	81.6	85	86.7	69.4
Change Major:											
No	31	66.0	9	52.9	29	69.1	76	73.8	82	82.8	70.2
Relation of Current Job to Major (Mean)	(3.54)		(3.46)		(3.64)		(3.72)		(3.37)		(3.56)
Directly	8	22.9	2	15.4	6	24.0	11	17.2	14	25.9	21.6
Mostly	7	20.0	4	30.8	6	24.0	12	18.2	14	25.9	22.2
Somewhat	13	37.1	6	46.2	4	16.0	25	39.1	18	33.3	34.5
Not at all	7	20.0	1	7.7	9	36.0	16	25.0	8	14.8	21.6
Employment Pattern:											
Not employed	5	10.6	2	11.8	5	11.9	23	22.3	18	18.2	17.3
Mostly part-time	3	6.4	5	29.4	15	35.7	38	36.9	45	45.5	34.3
Mostly full-time	32	68.1	9	52.9	17	40.5	23	22.3	17	17.2	31.7
Full and part-time	5	10.6	1	5.9	3	7.1	11	10.7	6	6.1	8.7
Occasional	2	4.3	0	-	2	4.8	8	7.8	13	13.1	8.0

frequently used as an indicator of satisfaction with education and of success of the program. In this instance, "current" job is likely to be one's first job after graduation (we will return to this below) and the relationship thus becomes an even more meaningful estimate. Looking at the mean scores, all groups felt that their present job was between "somewhat" and "mostly" related to their program of study. There was no association between relevance of job to major and length of time to graduation (Table 3, "Relation of current job to major"), so that this measure of satisfaction does not contribute to furthering understanding of delayed completion of business curricula.

Table 4 (page 15) presents respondents' views about the adequacy of college services and their opinions about the importance of various financial aid options in helping defray educational expenses. In examining the top half of the table ("Important factors in paying for college costs"), the higher mean scores represent the less important items: a scale value of "1" = "of major importance," while a "3" = "of no importance". Of greatest importance in paying for the college costs of on-time graduates (and of the plus-one year respondents) were, in order, TAP (N.Y. State Tuition Assistance Program), BEOG (Basic Educational Opportunity Grant) and earnings from summer jobs, and the aid received from their family. (Of relatively least importance was SEEK/CD (College Discovery) stipends, followed by NDSL (National Direct Student Loan), SEOG (Supplemental Educational Opportunity Grant), and employer contributions.) The importance of (parental) family aid to on-time graduates has already been noted and, in the same vein, it is not surprising that employer contributions were not important since relatively few on-time graduates worked full-time during their schooling and probably did not qualify for tuition reimbursement programs offered by businesses to full-time employees.

In marked contrast, earnings from summer jobs, personal savings, and employer contributions were rated most important by the group in school longest (the plus-four years respondents, those that enrolled in the Spring 1976 or earlier) as well as by those enrolled for the next longest period of time. To these delayed graduate groups, scholarships, SEEK/CD stipends, and SEOG and GSL (Guaranteed Student Loan) represented relatively unimportant sources of revenue.

As far as financial resources are concerned, certain options--SEEK/CD,

TABLE 4

Important Sources of Financial Aid and Satisfactory College Services for On-Time and Delayed June 1981 Graduates with Degrees in Business Curricula

COLLEGE COSTS, IMPORTANT FACTORS ^a	Plus-Four+ (N=47)	Plus-Three (N=17)	Plus-Two (N=42)	Plus-One (N=103)	On-Time (N=99)	TOTAL BUSINESS (N=308)
	Mean	Mean	Mean	Mean	Mean	Mean Score
TAP	2.55	2.31	1.51	1.58	1.77	1.82
BEOG/Pell	2.43	2.40	1.72	1.63	1.87	1.89
SEOG	2.90	2.85	2.94	2.53	2.85	2.77
SEEK/CD	2.95	2.71	2.91	2.82	2.95	2.89
GSL	2.90	2.79	2.53	2.48	2.66	2.64
NDSL	2.87	2.85	2.73	2.69	2.86	2.79
Summer jobs	2.71	2.69	2.15	2.01	2.00	2.18
Personal savings	2.00	1.92	1.79	1.96	2.02	1.96
School yr. jobs	1.66	1.78	1.63	1.77	1.88	1.76
Family support	2.56	2.15	2.25	1.91	1.94	2.09
Veterans Benefits	2.84	2.92	2.87	2.81	2.82	2.83
Empl. contribut.	2.19	2.15	2.72	2.86	2.83	2.67
Scholarships	3.00	2.85	2.85	2.78	2.80	2.84
COLLEGE LIFE, SATISFACTION ^b						
Academic Advis.	2.82	3.11	2.61	3.03	2.78	2.85
Finan. Aid Couns.	2.86	2.50	2.61	2.83	2.52	2.67
Equipment	2.97	3.08	2.91	2.97	2.94	2.95
Remedial Instr.	3.10	3.12	2.92	3.04	2.93	3.00
Employ. Serv.	1.83	2.33	2.38	2.66	2.20	2.38
Co-op Educ.	2.67	2.25	2.67	3.06	2.74	2.81
Orientation	2.77	2.75	2.58	2.80	2.86	2.78
CD/SEEK	2.00	3.50	2.20	3.00	2.40	2.65
Serv. for Handic.	3.00	1.00	2.80	2.67	2.67	2.70
Career Couns.	2.75	3.00	2.47	2.78	2.60	2.67
Classroom Instr.	3.06	3.06	2.88	3.04	3.09	
Jobs related to Major	2.82	2.65	2.78	2.79	2.93	-
Course Material	3.02	2.81	3.00	2.99	2.98	-
Admiss. Info.	2.52	2.60	2.37	2.62	2.71	-
Class Size	2.72	2.53	2.80	2.74	2.80	-
Meeting Instru.	2.84	2.77	2.96	2.97	2.98	-
Interesting Cour.	2.77	2.77	2.85	2.66	2.81	-
Helpful Staff	2.47	2.82	2.44	2.54	2.46	-
Job Place. Serv.	2.43	2.75	2.30	2.56	2.55	-
^a The <u>higher</u> the mean score, the <u>less</u> important the financial aid. ^b The <u>higher</u> the mean score, the <u>more</u> satisfactory the quality of the service.						

SEOG, for example--have virtually no importance to business students and no relationship to rate of completion. On the other hand, however, certain other factors--principally family aid and employer contributions--are differentially associated with the number of years students take to complete a business-related career program and these factors, in turn, correlate with students' employment patterns or need to work while in college.

The scale used to rate the items listed in the bottom half of Table 4 is reversed: here, the higher the scale value ("4" on a 4-point scale), the greater the degree of satisfaction. As can be seen, on-time graduates and delayed graduates tend not to differ on some items. For example, there was little difference between the extreme groups with respect to how satisfied they were with "job placement services", the "helpfulness of college staff", "material covered in courses", quality of "classroom instruction", or "equipment used in technical and laboratory courses". There were small differences on the following items, with on-time graduates more satisfied than the most extremely delayed graduates: "employment services to help in finding a job while a student", "cooperative education", "CD/SEEK", "admissions information", the opportunity to "meet instructors outside of class", and "job placement services". Delayed graduates tended to be slightly more satisfied than on-time graduates with respect to "financial aid counseling", "remedial instruction", and "career counseling". These differences are congruent with already discussed differences--and needs--of the extreme respondent groups.

Relative to the other items asked about, on-time graduates were most satisfied with (in descending order): the quality of classroom instruction, the opportunity to meet instructors and the course material, laboratory equipment, and the "orientation program for new students". Graduates who were in college plus-four (or more) years were relatively most satisfied with remedial instruction, course material, services for the handicapped, equipment, and financial aid counseling. Irrespective of entry date, June 1981 business graduates were least impressed with "employment services" and CD/SEEK programs, and the helpfulness of college staff.

The satisfaction data, generally, tend not to discriminate between students who complete business-related curricula in two years and those

who take longer. From these data alone, it would seem that there were few critical differences in in-school experiences that have a direct impact on completion time. Differences that do exist appear to be more closely tied to students' financial needs and financial resources--and particularly to whether family income or one's own employment is the mainstay aid--and these factors, in turn, seem to be the most powerful determinants of completion rate.

Does complete rate relate to what students do educationally or vocationally after graduation? The data in Table 5 on page 18 look at this question.

Approximately one year after graduation (at which time the questionnaire was administered), half (54.5%) of the on-time graduates, but three-fourths (76.6%) of the plus-four years group was working full-time. In other words, the more time spent pursuing an associate degree in business, the greater the likelihood of being employed full-time during the year following graduation. (Note that proportionately more of the on-time and closer-to-time groups were working on a part-time basis.) However, this conclusion is somewhat misleading since delayed graduates are much more likely to be employed in jobs they had had prior to graduation.

There is a dramatic relationship between how long it took respondents to find their current job (Table 5, "Job search time") and how long they spent working toward their degree: about 9 out of 10 (88.6%) of the plus-four years respondents were working full-time at a job--the job they worked at while enrolled in college and which was apparently necessary to support their education--in sharp contrast to one-third (32.1%) of the on-time graduates. (Note also the inverse tendency for more on-time graduates to require more time to locate their present job.) The fact that delayed graduates stayed with their job, coupled with the finding that employer contributions were a more important factor in their finances, suggests a possible difference among graduates in why they elected a college education. An hypothesis to explore in the future is whether delayed graduates with degrees in business-related programs enroll in college (perhaps at the behest of employers) to further their career progress within a particular organization or company.

How long graduates were employed in their present job supports these con-

TABLE 5

After Graduation Activities of On-Time and Delayed June 1981
 Graduates with Associate Degrees in Business Curricula

CURRENT EMPLOYMENT/ EDUCATION STATUS	Plus-four ⁺ (N=47)		Plus-three (N=17)		Plus-two (N=42)		Plus-one (N=103)		On-Time (N=99)		TOTAL BUSINESS (N=308)
	N	%	N	%	N	%	N	%	N	%	%
Presently:											
Working full-time	36	76.6	13	76.5	25	59.5	64	62.1	54	54.5	62.5
Working part-time	3	6.4	1	5.9	4	9.5	15	14.6	20	20.2	13.8
Not working	8	17.0	3	17.6	13	31.0	23	22.3	25	25.3	23.4
Job search time:											
Had job in school	31	88.6	13	100.0	17	68.0	29	45.3	17	32.1	56.5
2 mos. or less	2	5.7	0	-	6	24.0	17	26.6	22	41.5	24.9
3-6 mos.	1	2.9	0	-	1	4.0	8	12.5	10	18.9	10.4
7 or more mos.	1	2.9	0	-	1	4.0	10	15.6	4	7.5	8.3
How long employed:											
1 year	3	8.8	1	9.1	4	18.2	18	36.0	15	44.1	27.5
1-2 years	4	11.8	1	9.1	5	22.7	11	22.0	7	20.6	18.3
2-5 years	8	23.5	4	36.4	10	45.5	14	28.0	7	20.6	28.8
5-10 years	8	23.5	3	27.3	1	4.5	4	8.0	3	8.8	12.4
more than 10 years	11	32.4	2	18.2	2	9.1	3	6.0	2	5.9	13.1
Potential:											
Definite	16	45.7	3	23.1	6	25.0	20	31.7	21	38.9	34.4
Possible	10	28.6	7	53.8	11	45.8	23	36.5	25	46.3	40.6
Little/None	9	25.7	2	15.4	4	16.7	9	14.3	1	1.9	13.0
Temporary	0	-	1	7.7	3	12.5	11	17.5	7	13.0	12.0
Annual Gross Salary:											
Mean	\$18,875		\$13,654		\$14,820		\$13,156		\$13,398		\$15,817
Median	\$19,000		\$13,750		\$14,625		\$12,571		\$13,333		\$14,217
Reason Not Working:											
In school full-time	4	50.0	1	25.0	4	30.8	17	65.4	19	70.4	58.2
Can't find	3	37.5	2	50.0	2	15.4	3	11.5	4	14.8	17.7
Gave up	0	-	1	25.0	1	7.7	2	7.7	1	3.7	6.3
Ill/disabled	0	-	0	-	1	7.7	1	3.8	0	-	2.5
Laid off	1	12.5	0	-	1	7.7	2	7.7	0	-	5.1
Family responsibility	0	-	0	-	3	23.1	1	3.8	3	11.1	8.9
Other	0	-	0	-	1	7.7	0	-	0	-	1.3
Cont.educ.after grad:											
No	18	40.0	9	52.9	16	38.1	33	32.0	33	34.0	35.9
CUNY, BA	15	33.3	5	29.4	16	38.1	46	44.7	46	47.4	41.0
BA, non-CUNY	8	17.8	2	11.8	7	16.7	16	15.5	12	12.4	14.4
Grad., CUNY	0	-	0	-	0	-	0	-	0	-	-
Grad, non-CUNY	0	-	0	-	1	2.4	0	-	1	1.0	0.6
Other	4	8.9	1	5.9	2	4.8	8	7.8	5	5.2	6.4
Currently enrolled:											
Yes, full-time	5	17.9	1	11.1	16	64.0	34	47.2	38	59.4	47.2
Yes, part-time	16	57.1	6	66.7	6	24.0	25	34.7	18	28.1	35.7
No	7	25.0	2	22.2	3	12.0	13	18.1	8	12.5	17.1
Highest Degree sought:											
Associate	3	10.3	2	20.0	3	11.1	4	5.5	3	4.4	7.2
Bachelor	13	44.8	5	50.0	7	25.9	29	39.7	34	50.0	42.8
Master's	12	41.4	3	30.0	16	59.3	35	47.9	19	27.9	40.9
Professional	0	-	0	-	0	-	1	1.4	7	10.3	3.8
Ph.D	1	3.4	0	-	1	3.7	4	5.5	5	7.4	5.3

lectures. Proportionately more of the respondents in the plus-three and plus-four years groups had held their present job for from five to 10 or more years, while the majority of on-time graduates and plus-one year graduates had been working for their current employer two or fewer years, and typically less than one year. Thus, the on-time and closer-to-time groups, who tended not to work full-time while in college (largely because they lived with their parents and were less needy of this income), found a job within two months after graduation and have remained in it for the year between graduation and the administration of the questionnaire. An interesting question is whether in five or 10 years hence, as many of these respondents as delayed graduates will still be with the same employer.

Generally, with longevity in a job there are increases in salary and, as can be seen in Table 5, there was a \$5.5 thousand difference in mean annual salary between the extreme graduate groups. Although this variation can be a function of job performance, or any one of a number of other factors including current economic trends, it most probably simply reflects length of time on the job.

It is interesting that even though the plus-four group had had the same job for many years, somewhat more of them (45.7%) than the on-time group (38.9%) see it as offering "definite possibilities for advancement." On the other hand, proportionately more of the extremely delayed group described their current job as a dead-end, with "little or no potential for advancement." This is quite different from the number of on-time graduates who considered their current job "temporary", until a better one could be found. However, for all groups, the current job was more frequently than not satisfactory in terms of its future potential for growth.

Within each respondent group, most people were working. Relatively few were not employed either full-time or part-time, but more on-time than delayed graduates were unemployed when the questionnaire was administered. The survey asked for the reason people were not presently working and their responses are summarized in Table 15 (page 18). For almost 60 percent (58.2%) of all graduates, the major reason for not working was full-time schooling; about 70 percent of on-time graduates (as contrasted with half of the plus-four group) were in school. Compare these proportions (noting the small Ns) with the proportion

who were looking for a job but could not find anything suitable. Not being able to find a suitable job is more characteristic of respondents who take longer to graduate.

Irrespective of completion rate, the majority of graduates continued their education after graduating from a two-year college, with most going on for a bachelor's degree from a CUNY institution. Somewhat more delayed than on-time or closer-to-time graduates tend not to continue their education immediately after graduation (probably because they had been students for many more years). Also not surprising considering their regular enrollment patterns and their marital status and patterns of family responsibilities is the finding that on-time graduates who continued their education did so as full-time students. This suggests that they continue to receive parental encouragement and support and, furthermore, may have adopted a different approach to education.

However, "education" is important to most all respondents. As can be seen in Table 5, relatively few people's educational aspirations were met with the attainment of an associate degree. The vast majority aspire to a baccalaureate or master's degree--or more advanced training--and there is little difference among groups' aspirations that relate to length of time to complete the associate degree requirements. Most students who complete a business-related program of study at a CUNY community college do not see the associate degree as terminal, and most immediately enroll in some advanced educational program. Neither differences in educational goals nor in the after-graduation attempts at implementing these objectives account for the fact that some business students spend two years at a two-year college while others (a significant 15 percent) spend a total of six or more years there.

To obtain a better understanding of this phenomenon, in the following section we will examine the academic records (transcripts) of a sample of June 1981 graduates and cohorts.

Academic progress of June 1981 graduates and cohorts. As we saw, not all June 1981 business-related curricula graduates started their two-year program at the same time. Indeed, there were wide discrepancies in how many years were required to complete the associate degree. Using a different sample of June 1981 graduates, here we compare their academic progress with cohorts

who entered in different years to ascertain how graduates' progress compares with that of the typical student.

For these comparisons, we had available transcripts for a total of 84 randomized selected June 1981 graduates who first started at the college from which they graduated in the Spring 1976 or earlier (3 graduates or 3.6%); during the Fall 1976 to Spring 1977 (6 or 7.1%); Fall 1977 to Spring 1978 (12--14.3%); Fall 1978 to Spring 1979 (32--38.1%); or Fall 1979 or later (31--36.9%). The last group, Fall 1979 or later, on-time graduates, is also comprised of students with transfer credits. The others, in backwards order, took plus-one, plus-two, plus-three, and plus-four or more years to graduate.) Note that this distribution of graduates by date of entry fairly well matches the distribution of the questionnaire respondents, except for the plus-four or more years group: if we accept the transcript data as more representative of the business graduate population, this means that proportionately more of the plus-four group responded to the questionnaire than is actually represented in the 1981 graduating class.

We also obtained a random sample of cohorts' transcripts, a total of 127--students who enrolled in select community college business-related career programs in the Fall 1976 (N=46), Fall 1977 (45), and Fall 1978 (36). As can be seen in Table 6 (on page 22) which summarizes the data from the official academic records, no transcripts were requested for students who entered college in the Fall 1979 or later, or in the Spring 1976 or earlier; thus, we have no cohort data comparable to the on-time and extremely delayed graduates.

The two transcript samples (i.e., graduates and cohorts) also differ in one other important way (which also applies to the health-related and engineering technology students discussed in the following sections). Graduates' transcripts are comprised exclusively of students who obtained degrees in business (or health or engineering as the case may be); these students did not necessarily start college with a major in business (or in health or engineering). As is detailed in Table 6, fairly substantial proportions of graduates had changed major--at least once--but all were graduated with a degree in business.

This is not the case with the cohort transcripts. Here, program at

TABLE 6

Selected Information from Transcripts of June 1981 Graduates with Associate Degrees in Business and of Cohorts from Three Years

TRANSCRIPT VARIABLES	Spring 76 or earlier		Fall 76- Spring 77		Fall 77- Spring 78		Fall 78- Spring 79		Fall 79- or later		TOTAL BUSINESS							
	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts						
N transcripts	3	0	6	46	12	45	32	36	31	0	84	127						
% graduated	100.0	-	100.0	28.3	100.0	2.2	100.0	0	100.0	-	100.0	11.0						
Sex (% Male)	33.3	-	33.3	39.1	33.3	35.6	13.3	44.4	22.6	-	22.0	39.4						
Age: Mean	32.0	-	23.0	24.2	24.7	21.6	22.5	20.2	21.1	-	21.5	22.1						
Median	32.0	-	22.5	23.0	24.3	21.6	21.5	20.2	21.3	-	21.4	21.7						
H.S. program:																		
% academic	50.0	-	66.7	72.7	100.0	79.3	78.3	53.8	65.0	-	75.0	69.3						
% voc/tech	50.0	-	33.3	24.3	0	20.7	17.4	23.1	25.0	-	20.0	22.7						
% GED	0	-	0	3.0	0	0	4.3	23.1	10.0	-	5.0	8.0						
Address change(% yes)	0	-	33.3	8.7	16.7	6.7	6.2	0	3.2	-	8.3	5.5						
Change of major(% yes)	33.3	-	0	10.9	16.7	4.4	9.4	5.6	3.2	-	8.3	7.1						
% enrolled in 4 semesters, in sequence	33.0	-	66.7	45.6	75.0	40.0	100.0	27.8	93.5	-	89.3	38.6						
Ave.N courses passed:																		
4 in-sequence	13.0	-	17.8	13.8	15.2	12.9	15.4	9.9	16.8	-	16.0	12.6						
4 not-in-sequence	8.0	-	14.0	5.8	12.7	5.1	0	3.7	16.0	-	12.7	4.8						
Ave.N. withdrawals:																		
4 in-sequence	1.0	-	1.2	1.5	1.0	2.0	1.0	2.4	0.3	-	0.8	1.9						
4 not-in-sequence	0	-	2.5	2.9	3.3	2.5	0	2.5	1.0	-	1.9	2.6						
Ave.N. courses failed:																		
4 in-sequence	0	-	0.8	1.0	0.6	1.9	0.6	2.0	0.1	-	0.4	1.8						
4 not-in-sequence	0.5	-	1.0	1.4	0	1.2	0	1.7	0	-	0.3	1.4						
	81 grads	G	NC	81 grads	G	NC	81 grads	G	NC	81 grads	G	NC	81 grads	G	NC			
Ave. N semesters enrolled in courses	11.6	-	-	7.0	6.2	3.8	8.4	5.0	4.1	8.2	0	3.3	5.9	-	-	7.4	6.1	3.8
Ave. N semesters missed in sequence	4.3	-	-	2.0	1.0	1.0	1.2	0	1.5	0	0	1.4	1.0	-	-	1.7	1.0	1.4
Ave. N probations	0	-	-	1.3	0	0.6	0.9	0	0.5	0.3	0	0.6	0	-	-	0.4	0	0.6
Ave. N dismissals	0	-	-	0.2	0	0.3	0	0	0.2	0.1	0	0.3	0	-	-	0.1	0	0.3
Ave. N honors	0	-	-	0.5	1.1	0.1	0	0	0.1	0.5	0	0.1	1.2	-	-	0.7	0.7	0.1

enrollment was the criterion for selection and although several students changed major once or several times subsequently and may have been graduated with a major in an entirely different curriculum, they are retained in the sample. In other words, June 1981 graduates' transcripts describe students who ended their two-year college career with degrees in business programs irrespective of what program they initially enrolled in, whereas cohorts started out in business programs irrespective of what program they were enrolled in (or had graduated from) in 1982 when we reviewed their transcripts.

If indeed the cohort transcripts were truly random, and in the business programs we obtained most of the random sample we requested, cohort data represents the norm. Graduates represent a special sub-population of entering students. In examining the data in Table 6, what is dramatic is how few cohorts had graduated by the Spring 1982 when the transcripts were requested. Of the three entering groups totalling 127 cohorts, only 11.0 percent overall had graduated, with most of these having been first enrolled in community college between the Fall 1976 and Spring 1977 (plus-three or more years). Note too that graduation is more likely with the passage of more years.

Table 6 (page 22) also shows that proportionately fewer males graduate than are enrolled (compare the distribution of male graduates to the distribution of male cohorts). For example, about 44 percent (44.4%) of students who entered in Fall 1978 were men, but 13 percent of the comparable June 1981 graduates who started then were male. (The same pattern, although not as dramatic, prevails for the Fall 1976-Spring 1977 entrants.) These data mean that women business students are more likely than men to graduate on-time and that with a greater number of years spent in school, the difference in female-male completion rate diminishes. This is in direct contradiction to the questionnaire data presented in Table 2 and may be an artifact of the small number of transcripts for some groups or, alternatively, may represent a greater likelihood on the part of women graduates--especially enrollees from earlier years--to respond to the questionnaire. Whatever the relationship of sex to rate of completion, however, proportionately more women than men in the business curricula (eventually) graduate.

Table 6 also reveals that June 1981 graduates tend to be older than their

typical entering cohort--compare mean age of graduates to cohorts--and, as expected, the plus-three years group is older than the plus-one year group. Their advanced age is, of course, merely a function of the passage of time and the fact that most community college entrants start college immediately after high school graduation.

Is there a relationship between high school background and completion rate? Table 6 illustrates that, for example, 54 percent (53.8%) of the cohorts who started college in Fall 1978 were from academic high schools (in comparison to 72.7% of those who were in college since Fall 1976), but that 78.3 percent of the graduates were from academic high schools. Although not definitive, it appears that not only in recent years have business programs witnessed a decrease in the proportion of enrollees from academic high schools, but that they also saw an increase in the proportion of those completing college with minimal delays. More and better data is needed to substantiate this observation.

Transcripts also note address changes, although these are not consistently or systematically entered on the records. Nevertheless, as can be seen in Table 6, proportionately more June 1981 graduates than cohorts changed their address and, for both groups, there was a positive association between change of address and date of entry: the longer the period of time in college, the more cohorts--and graduates--change address, but this too is probably an attribute of the passage of time.

Of more significance to understanding characteristics that distinguish on-time graduates from delayed graduates (or from students not yet graduated) is change in major program of study. Here the data indicate that, first, changes in major are more likely among delayed than among on-time graduates (this trend was already noted, see Table 3) and among those in college longer, but second and more interestingly, a greater likelihood for graduates than for cohorts to have changed from one to another major (see Table 6, page 22). A significant question for future research is whether a change of major is positively associated with the eventual attainment of a degree, even though it may be negatively associated with graduating on-time.

Further analysis of the transcripts highlights other expected patterns. For example, delayed graduates (plus-four years) are not only in college

longer than on-time ones (by definition), but they take courses during more different semesters.¹ Delayed graduates participate in courses for an average of 11.6 semesters (of the theoretical 10 semesters they are matriculants), in comparison to on-time graduates who took courses in an average of 5.9 of the theoretical four semesters they were in attendance. (Note that this is not a consistent trend.) The same pattern obtains for the entering cohort groups generally, but here the data was treated separately for cohorts who graduated and cohorts who did not graduate (see Table 6). Thus using Fall 1976 and Fall 1977 as illustrations, the June 1981 graduate samples took courses an average of 7.0 and 8.4 "semesters", respectively; the cohorts who had graduated (G in Table 6) took courses an average of 6.2 and 5.0 semesters, respectively, while the non-graduating cohorts (NG) enrolled in courses in only 3.8 and 4.1 semesters, respectively. These figures suggest an important difference between graduates and cohorts that pertains not to the fact that graduates take more courses per semester, but that they are enrolled in (at least one) course(s) during more semesters. (A similar conclusion holds for on-time graduates in comparison to delayed graduates.)

Other enrollment patterns distinguish the graduate from the cohort. Looking first at June 1981 graduates, we see that proportionately more on-time than delayed students enrolled in courses in four sequential semesters from date of entry, but even in the plus-three group, two-thirds of the graduates had not missed course work in any of the first four terms. In other words, even for delayed graduates, matriculation was regular in the early years. (Because of the small N's in the plus-three and plus-four years groups some caution should be exercised in this interpretation.)

The general cohort picture, however, looks substantially different. For the three entering years for which transcripts were available, a reverse trend

¹Because these data involve students from LaGuardia Community College (which operates a quarter calendar plan) and from Kingsborough Community College (which has a tri-semester calendar), the "number of semesters" is more than two per academic year; summer sessions were also counted as a semester if a student had enrolled in courses during these times.

is noted: proportionately more of the students in college longer than of the more recently enrolled ones took courses during the first four consecutive semesters.

The final thing to note is that graduates were more likely than cohorts to be involved with courses in the first four semesters, irrespective of the date of entry. Thus, patterns of enrollment in the first few semesters are a good indication of both probability of graduation and of speed of completion.

On-time graduates miss fewer semesters where they do not take courses than do delayed graduates. That is, of those graduates who take time off between initial enrollment and graduation, on-time graduates lose fewer semesters on the average: 1.0 semesters for on-time graduates and 2.2 semesters for graduates delayed plus-four or more years. (Of striking note in examining all transcripts for this study was that in no case did we come across a student transcript which showed more than one period of time missed. All transcripts that showed a break showed only the one break, but for differing durations. Based on this finding, at least with respect to the business-related, health-related, and engineering technology curricula, CUNY community college students do not take courses, stop out, take courses, and stop out, again and again. Rather, as is more typical, there is one stop out break which may last for one semester to several years.)

Table 6 (page 22) also presents, for June 1981 graduates and cohorts, analyses of the average number of courses they passed, withdrew from, and failed during their first four semesters, subdivided into groups who took four semesters in sequence and groups whose first four semesters were not in sequence. For the in-sequence graduate sample, we see no strong relationship between number of courses passed and completion rate: this June 1981 graduate sub-sample completed 16.0 courses in four semesters, which is more than the 12.6 courses passed by cohorts. The not-in-sequence comparison of courses passed by June 1981 graduates and cohorts is even more striking, with the graduates having passed 12.7 courses in comparison to 4.8 courses for cohorts. The overall conclusion is that, graduates pass more courses than cohorts (most of whom have not graduated), irrespective of whether a stop-out break occurred within the first four semesters following date of entry. Furthermore, June 1981 graduates

withdrew from and failed fewer courses in their first four semesters (taken consecutively or not-in-sequence) than did cohorts. Moreover, based on June 1981 graduates, the number of withdrawals and failures is inversely related to speed of completion.

The final data presented in Table 6 pertains to probations and dismissals (academic and conditional) and honors: this information is available for June 1981 graduates, cohort graduates (G) and cohort non-graduates (NG). In examining these data, it is apparent that there were fewer dismissals and probations among June 1981 graduates than among cohorts, and for graduates, a negative relationship with completion rate. There was a similar finding with respect to honors, but in this instance, the on-time graduates received more honors than the delayed ones; however, it is not clear whether graduates were awarded more honors than cohorts, although such a trend appears to exist.

The summary picture of the June 1981 graduate that emerges from an analysis of academic records of date of entry, and from a comparison with entering cohorts, suggests that the typical graduate of a business-related program is more likely, to be female, with women even more likely than men to graduate on-time. Furthermore, proportionately more older than younger business students starting college together graduate. There is also some indication, albeit slight, that graduates of academic high schools are better represented among graduates than among the general cohort population and that an academic high school background is positively related to on-time or closer-to-time graduation.

The typical on-time business graduate, as was noted earlier, changes major less frequently than both the delayed graduate and entering cohort and also tends to enroll in, complete, and pass more courses. Moreover, she/he actually engages in coursework during more semesters between date of entry and graduation than does the delayed graduate or respective cohort.

Graduates are also noted for being more likely to enroll in courses for four consecutive semesters (from date of entry) than are cohorts, but this does not seem to relate to the speed of completion: nor does course failures or withdrawals from courses. Graduates who took four semesters of courses in

sequence, in contrast to graduates who stopped out within the first two years, irrespective of date of entry, successfully complete more courses; they also have more completions and fewer failures and withdrawals than cohorts.

On-time graduates who stop out do so for shorter periods of time than do either delayed graduates or cohorts. The business student who stops out of college does so one time only.

As expected, in comparison to delayed graduates and to cohorts, proportionately more on-time graduates receive academic honors and, conversely fewer academic and/or conditional probations or dismissals.

Perhaps of most importance is the graduation status of the cohort sample-- a mere 11 percent of students who started college in the period from Spring 1976 to Fall 1979 or later were graduated; most of these required a **total of five** years to complete the two-year course of study culminating in an **associate** degree in a business-related curriculum.

HEALTH-RELATED CAREER PROGRAM STUDENTS

This section reviews the activities of June 1981 **graduates** with associate degrees in the health-related fields; questionnaire and **transcript data**, identical to that described above, is reported. Tables 7-10 summarize the questionnaire data, while Table 11, following, deals with the information we abstracted from the transcripts. Where appropriate, comparisons will be made with the results obtained for students in the business curricula.

Experiences of June 1981 graduates. A total of 252 graduates of health-related programs responded to the questionnaire. Of these, 60 people (23.8%) were on-time graduates, while graduation was delayed by plus-one, plus-two, plus-three, and plus-four or more years for 99 (39.3%), 45 (17.9%), 21 (8.3%), and 27 (10.7%) of the respondents, respectively (see Table 1, page 7). In comparison to business students, there were proportionately fewer on-time graduates in the health-related fields.

Most respondents were female; overall, only 13.4 percent were men (see Table 7, page 29), with males accounting for a disproportionately greater number of delayed graduates. Unlike business students, men in health fields

TABLE 7

Self-Reported Background Characteristics of On-Time and Delayed June 1981
Graduates with Associate Degrees in the Health-Related Curricula

DEMOGRAPHIC VARIABLES	Plus- four + (N=27)		Plus- three (N=21)		Plus- two (N=45)		Plus- one (N=99)		On-Time (N=60)		TOTAL HEALTH (N=252)
	N	%	N	%	N	%	N	%	N	%	%
Sex: Male	6	22.2	5	23.8	6	13.3	9	9.2	8	13.3	13.4
Current Marital Status:											
Single	6	22.2	7	33.3	19	42.2	58	58.6	44	73.3	52.9
Sep/Div/Wid.	5	18.5	2	9.5	8	17.8	13	13.1	3	5.0	12.6
Married	16	59.3	12	57.1	18	40.0	28	28.3	13	21.7	34.5
No. Dependent Children											
None	11	40.7	11	55.0	20	44.4	59	59.6	47	78.3	59.1
One/two	14	51.8	7	35.0	19	42.2	26	26.1	13	21.7	31.1
Three/four	2	7.4	2	10.0	6	13.3	13	13.1	0	-	9.5
Five or more	0	-	0	-	0	-	1	1.0	0	-	0.4
Ethnicity:											
Puerto Rican	0	-	3	14.3	2	4.5	10	10.1	5	8.3	7.9
Other Hispanic	2	7.4	2	9.5	3	6.8	3	3.0	3	5.0	5.1
Black	14	51.9	4	19.0	14	31.8	26	26.3	7	11.7	25.6
White	9	33.3	12	57.1	22	50.0	58	58.6	42	70.0	57.5
Other	2	7.4	0	-	3	6.8	2	2.0	1	1.7	4.0
Immigrant Status:											
None immigrant	12	44.4	11	52.4	26	STET	61	61.6	46	76.7	62.5
Self/self & parents	9	33.3	4	19.0	11	25.0	16	16.2	8	13.3	18.9
One/both parents	6	22.2	6	28.6	7	15.9	22	22.2	6	10.0	18.5
Religious Preference:											
Catholic	10	40.0	14	66.7	27	64.3	47	51.6	28	49.1	53.6
Protestant	9	36.0	4	19.0	7	16.7	16	17.6	9	15.8	18.8
Jewish	1	4.0	1	4.8	3	7.1	12	13.2	13	22.8	13.0
No preference	4	16.0	2	9.5	4	9.5	11	12.1	7	12.3	11.7
Other	1	4.0	0	-	1	2.4	5	5.5	0	-	2.9
Handicapping Condition:											
Yes	1	3.7	1	4.8	1	2.2	2	2.0	1	1.7	2.4
Father's Education:											
8th grade or less	8	33.3	3	14.3	7	17.5	22	23.9	7	12.3	19.8
Some h.s.	3	12.5	12	57.1	14	35.0	13	14.1	12	21.1	23.6
H.S. graduate	5	20.8	5	23.8	12	30.0	27	29.3	17	29.8	28.3
Some college	6	25.0	0	-	2	5.0	18	19.6	6	10.5	13.5
Coll. graduate	0	-	1	4.8	2	5.0	2	2.2	5	8.8	4.2
Postgrad/Professional	0	-	0	-	0	-	5	5.4	7	12.3	5.1
Don't know	2	8.3	0	-	3	7.5	5	5.4	3	5.3	5.5
Mother's Education:											
8th grade or less	6	23.1	9	42.9	12	28.6	30	30.3	7	11.9	25.6
Some h.s.	8	30.8	4	19.0	10	23.8	16	16.2	4	6.8	17.6
H.S. graduate	6	23.1	4	19.0	10	23.8	35	35.4	33	55.9	35.6
Some college	3	11.5	3	14.3	6	14.3	10	10.1	8	13.6	12.0
Coll. graduate	1	3.8	0	-	2	4.8	4	4.0	4	6.8	4.4
Postgrad/Professional	0	-	0	-	1	2.4	1	1.0	1	1.7	1.2
Don't know	2	7.7	1	4.8	1	2.4	3	3.0	2	3.4	3.6
Language at "Home"											
Eng. only	23	85.2	12	57.1	34	75.6	74	74.7	51	85.0	77.3
Eng. plus	3	11.1	7	33.3	8	17.8	20	20.2	8	13.3	18.0
Another	1	3.7	2	9.5	3	6.7	5	5.1	1	1.7	4.7

take longer than females to meet the two-year colleges' degree requirements. These seemingly contradictory results suggest that people of the predominant sex in sex-stereotyped curricula have a somewhat easier time than do opposite-sex students.

Marital status also relates to rate of completion, with married people taking longer to graduate on the one hand, and on the other, single people being over-represented among on-time graduates. Relatedly, half the respondents whose graduation was delayed by plus-four years had one or two dependent children, in contrast to only about 22 percent (21.7%) of on-time graduates.

There was also some relationship between speed of completion and ethnicity and religious preference. As can be seen in Table 7, proportionately more Blacks were delayed graduates while proportionately more Whites graduated on-time or closer-to-time. Similarly, Protestant people were likely to take longer to complete their program of study and proportionately larger numbers of Jewish people finished their degree requirements on-time. Immigrant status, too, was associated with rate of completion: delayed graduation being more usual if the student and one or both parents migrated to this country and less usual among the native-born. However, the language (or languages) spoken at home was not associated with differential rates of graduation--nor was there a clear relationship with parents' formal level of schooling.

Also not a critically distinguishing factor is income level during the years the respondent attended college; there was no consistent pattern between income level and graduation rate, although there was a tendency for higher income to be associated with fewer years in school (see Table 8, page 31). This most probably means that a higher level of income enabled the student to attend college and not work and this was, indeed, the case. First, respondents who reported parent income were more likely to graduate on-time (presumably because they lived with parents and were supported by them in whole or in part); about two thirds (67.3%) of on-time graduates lived with their parents in pointed

TABLE 8

Self-Reported Demographic Attributes and College-Going Experiences of On-Time and Delayed June 1981 Graduates with Associate Degrees in the Health-Related Curricula

INITIAL/IN-COLLEGE ITEMS	Plus-Four+ (N=27)		Plus-Three (N=21)		Plus-Two (N=45)		Plus-One (N=99)		On-Time (N=60)		TOTAL (N=252)
	N	%	N	%	N	%	N	%	N	%	%
At CUNY, "Family" Income:											
\$4,000/<	3	11.5	3	15.0	7	15.9	11	11.3	5	8.9	12.2
4,000-7,999	2	7.7	2	10.0	7	15.9	17	17.5	7	12.5	14.6
8,000-11,999	4	15.4	4	20.0	9	20.5	14	14.4	3	5.4	13.8
12,000-15,999	6	23.1	2	10.0	7	15.9	13	13.4	6	10.7	13.8
16,000-19,999	2	7.7	2	10.0	3	6.8	12	12.4	7	12.5	10.6
20,000-23,999	2	7.7	2	10.0	5	11.4	11	11.3	10	17.9	12.6
24,000-27,999	3	11.5	2	10.0	2	4.5	6	6.2	7	12.5	8.1
28,000-31,999	2	7.7	2	10.0	1	2.3	4	4.1	3	5.4	4.9
\$32,000/>	2	7.7	1	5.0	3	6.8	9	9.3	8	14.3	9.3
"Family" defined:											
Parents	3	12.0	6	30.0	18	41.9	50	51.5	37	67.3	47.3
Self/Spouse	22	88.0	14	70.0	25	58.1	47	48.5	18	32.7	52.7
Attend College before:											
No	21	77.8	16	76.2	39	86.7	74	74.7	32	53.3	72.5
Yes, CUNY	4	14.8	4	19.0	3	6.7	15	15.2	17	28.3	16.9
Yes, non-CUNY	2	7.4	1	4.8	3	6.7	10	10.1	11	18.3	10.6
First enrollment											
Full-time	9	33.3	12	57.1	32	71.1	85	85.9	52	86.7	74.9
Part-time	18	66.7	9	42.9	13	28.9	14	14.1	8	13.3	25.1
Enrollment Pattern:											
Only full-time	2	7.4	5	23.8	26	57.8	66	66.7	47	78.3	57.6
Mostly full-time	8	29.6	7	33.3	13	28.9	26	26.3	9	15.0	24.7
Half full-time	4	14.8	6	28.6	2	4.4	4	4.0	1	1.7	6.7
Mostly part-time	4	14.8	2	9.5	3	6.7	3	3.0	3	5.0	6.3
Only part-time	9	33.3	1	4.8	1	2.2	0	-	0	-	4.7
Interrupted Study:											
No	3	11.1	13	61.9	29	64.4	90	90.9	54	90.0	74.9
Change major:											
No	17	63.0	13	61.9	30	66.7	81	81.8	54	90.0	76.9
Relation to current											
Job Major: Mean	(2.32)		(3.08)		(2.37)		(2.36)		(2.24)		(2.38)
Directly	2	9.1	8	61.5	30	78.9	61	83.6	38	82.6	82.8
Mostly	16	72.7	0	-	2	5.3	4	5.5	1	2.2	3.1
Somewhat	1	4.5	1	7.7	2	5.3	2	2.7	3	6.5	4.7
Not at all	1	4.5	4	30.8	4	10.2	6	8.2	2	4.3	9.4
Employment Pattern:											
Not employed	1	3.7	5	23.8	22	48.9	25	25.5	18	30.0	32.3
Mostly part-time	8	29.6	7	33.3	16	35.6	37	37.8	30	50.0	37.8
Mostly full-time	5	18.5	5	23.8	3	6.7	14	14.3	2	3.3	13.8
Full time & pt-time	11	40.7	2	9.5	1	2.2	7	7.1	1	1.7	5.1
Occasional	0	-	2	9.5	3	6.7	14	14.3	9	15.0	11.0

contrast to 12 percent of graduates who took plus-four years to complete their education. Furthermore, self-reported employment pattern during the college years substantiates the strong relationship between the amount of time spent working and the number of years needed to complete college. (See Table 8.)

Full-time employment was associated with delayed graduation, as was a combination of full-time and part-time work. In comparison, more students who graduated on-time were employed on a "mostly" part-time basis during their schooling than were those whose graduation was extremely delayed. The trend is even more pronounced for graduates who did not work at all, or who worked only "occasionally". Of all the demographic variables considered, the amount of time a person spent working while also being a student is most strongly and directly related to how fast the degree requirements were met in the health-related, but especially in the business-related curricula.

As they described their backgrounds, for the majority of health-related program graduates, this was their first college experience: they tended not to have attended any other college before, and in this respect were similar to the business students. However, not having had a prior college experience was more usual for the delayed rather than the on-time graduates, about half of whom (53.3%) had not attended college before. In contrast, this was the first college experience for 77.8 percent of the plus-four years group. Stated alternatively, on-time or closer-to-time graduates of health career programs probably entered the CUNY community college from which they graduated with some transfer credits from another postsecondary institution.

Not only did on-time graduates start CUNY with this seeming advantage, but proportionately more of them were full-time students during their first semester at CUNY (see Table 8), and clearly were more likely to enroll full time thereafter. This is expected (by definition) since they completed their studies faster, but it also relates to their need to work and employment pattern.

Although employment history was previously discussed and current (i.e., at the time the questionnaire was administered) employment (and education) status follows below, here we will examine need--revenue sources that graduates

used to meet college costs. Table 9 (top half, page 34) lists 13 sources of money that questionnaire respondents' rated in terms of degree of importance in helping them pay for college. (In examining these data, low scores equate with high rankings of importance.) For health-related graduates overall, TAP was the single most important revenue source, followed by BEOG/Pell, family contributions, earnings from jobs, and personal savings. Least important, typically, were employer contributions, SEEK/CD stipends, and scholarships.

When the entry date sub-groups were considered, we see that certain forms of income distinguished between them: TAP, GSL, NDSL, summer work earnings, and family support were more important to on-time graduates than to delayed graduates. On the other hand, personal savings, earnings from jobs held during the school year, and employer contributions were rated of more importance by the plus-four and plus-three groups than they were to the students who completed their course of study in the prescribed two years.

Analysis of these distinguishing factors reinforces our assumption that work was more characteristics of delayed graduates while graduating on-time was likely to be associated with income derived from other sources. The ratings of health curricula graduates were very similar to those obtained from the business program students and again suggest the critical effects working has on the speed with which graduation requirements are completed.

Another factor that distinguished the on-time from the delayed graduate was changes in major. As can be seen in Table 8 (page 31), 90 percent of on-time and plus-one year graduates did not change their CUNY major, in comparison to only 11 percent of students delayed for plus-four years. These findings are similar to those for the business students as we saw above (Table 3, page 13), but the relationship is even more dramatic for the health-related program graduate.

Reactions to select aspects of college life were differentially related to completion rate. Health graduates' reactions to such things as the quality of

TABLE 9

Important Sources of Financial Aid and Satisfactory College Services for On-Time and Delayed June 1981 Graduates with Degrees in Health-Related Curricula

COLLEGE COSTS, ^a IMPORTANT FACTORS	Plus-Four+ (N=27)	Plus-Three (N=21)	Plus-Two (N=45)	Plus-One (N=99)	On-Time (N=60)	TOTAL (N=252)
	Mean	Mean	Mean	Mean	Mean	Mean Score
TAP	2.29	1.74	1.50	1.81	1.80	1.78
BEOG/Pell	2.14	1.47	1.55	1.89	1.93	1.83
SEOG	2.63	2.67	2.64	2.69	2.79	2.70
SEEK/CD	3.00	2.91	2.73	2.87	2.92	2.87
GSL	2.76	2.12	2.54	2.53	2.59	2.54
NDSL	2.71	2.21	2.56	2.61	2.57	2.58
Summer jobs	2.24	2.08	2.06	2.12	1.98	2.08
Personal savings	1.63	1.91	1.87	2.09	2.08	2.00
School yr. jobs	1.71	1.36	1.97	1.89	2.06	1.90
Family support	2.28	2.14	1.56	1.87	1.76	1.86
Veterans benefits	2.89	2.67	2.93	2.92	2.88	2.89
Empl. contribut.	2.53	2.69	3.00	2.88	2.98	2.88
Scholarships	2.89	2.58	2.73	2.83	2.77	2.79
COLLEGE LIFE, ^b SATISFACTION						
Academic Advis.	2.75	2.94	3.06	3.03	2.95	2.97
Finan. Aid Couns.	2.60	3.00	3.03	2.56	2.71	2.76
Equipment	3.16	3.05	3.20	3.08	3.21	3.14
Remedial Instr.	3.32	2.88	2.76	2.96	3.30	2.98
Employ. Serv.	1.60	2.57	2.80	2.77	3.00	2.70
Co-op Educ.	2.40	2.67	2.60	2.86	3.43	2.83
Orientation	2.33	2.67	2.73	2.63	3.00	2.70
CD/SEEK	1.67	4.00	2.42	3.30	4.00	2.83
Serv. for Handic.	1.67	-	2.20	2.71	3.50	2.47
Career Couns.	2.67	2.75	2.77	2.59	2.75	2.67
Classroom Instr.	3.22	3.29	3.18	3.24	3.28	
Jobs related to Major	2.92	3.19	3.36	3.20	3.25	-
Admiss. Info.	2.85	3.00	2.76	2.76	2.78	-
Class Size	2.93	2.81	2.87	3.00	2.97	-
Meeting Instru.	3.18	3.10	3.07	3.10	3.19	-
Interesting Cour.	2.89	2.86	2.89	2.99	3.00	-
Helpful Staff	2.82	2.81	2.78	2.76	2.63	-
Job Place. Serv.	2.77	2.85	2.83	2.78	3.07	-
Course Material	3.15	3.19	3.20	3.33	3.20	-

^aThe higher the mean score, the less important the financial aid.

^bThe higher the mean score, the more satisfactory the quality of the service.

academic advisement and classroom instruction are presented in Table 9 (page 34, bottom half of the table; note that the higher the mean score, the greater the degree of satisfaction).

Very much associated with speedy completion was graduates' satisfaction with employment services for students, cooperative education, orientation for new students, the CD/SEEK programs, services for the handicapped, the helpfulness of staff, and job placement services; with the exception of the inverse direction of the ratings concerning staff, there was a positive relationship between on-time graduation and higher levels of satisfaction with these other services. Reactions to the several other aspects of college life, however, showed few consistent variations that differentially related to rate of completion: the opportunity to meet instructors outside of class, class size, admissions information, remedial instruction, and so on (see Table 9). Several factors showed some variability in satisfaction when the mean scores of the extreme groups were compared, such as academic advisement and the relationship of current job to major, but there was no general pattern when the scores of the full range of groups were examined.

What were graduates of health-related career programs doing the year following graduation from the two-year college? Were they employed? In school? Table 10 on the following page summarizes respondents' current (i.e., at the time the survey was administered) activities. For each entry-date group, the majority of June 1981 graduates were working full-time with virtually no difference among groups in the proportions not employed. About 8 out of 10 on-time graduates (82.6%) however, felt their current job was "directly" related to their college major, in sharp contrast to less than 10 percent (9.1%) of the plus-four years group--the majority of whom rated their current job as "mostly" related to what they studied in college (see Table 8). As noted earlier, delayed graduates may be somewhat less satisfied with their present job which they have tended to have had for several years.

TABLE 10

After Graduation Activities of On-Time and Delayed June 1981 Graduates
with Associate Degrees in the Health-Related Curricula

CURRENT EMPLOYMENT/ EDUCATION STATUS	Plus-Four+ (N=27)		Plus-Three (N=21)		Plus-Two (N=45)		Plus-One (N=99)		On-Time (N=60)		TOTAL (N=252)
	N	%	N	%	N	%	N	%	N	%	%
Presently:											
Working full-time	22	81.5	13	61.9	38	84.4	73	74.5	46	76.7	75.6
Working part-time	1	3.7	3	14.3	4	8.9	14	14.3	6	10.0	11.8
Not working	4	14.8	5	23.8	3	6.7	11	11.2	8	13.3	12.6
Job search time:											
Had job in school	13	59.1	3	25.0	5	13.2	11	15.1	12	26.1	23.0
2 months or less	9	40.9	5	41.7	25	65.8	43	58.9	27	58.7	57.1
3-6 months	0	-	2	16.7	7	18.4	12	16.4	4	8.7	13.1
7 or more months	0	-	2	16.7	1	2.6	7	9.6	3	6.5	6.8
How long employed:											
1 year	7	36.8	6	75.0	20	83.3	31	66.0	19	61.3	64.3
1-2 years	1	5.3	0	-	3	12.5	10	21.3	9	29.0	17.8
2-5 years	2	10.5	1	12.5	1	4.2	5	10.6	0	-	7.0
5-10 years	4	21.1	1	12.5	0	-	1	2.1	1	3.2	5.4
more than 10 years	5	26.3	0	-	0	-	0	-	2	6.5	5.4
Potential:											
definite	7	31.8	7	53.8	20	52.6	28	38.4	20	44.4	42.9
possible	10	45.5	2	15.4	15	39.5	34	46.6	15	33.3	39.8
little/none	4	18.2	2	15.4	2	5.3	3	4.1	10	22.2	11.0
temporary	1	4.5	2	15.4	1	2.6	8	11.0	0	-	6.3
Annual gross salary:											
mean	\$14,818		\$15,500		\$16,132		\$15,185		\$15,413		\$16,343
median	\$17,250		\$17,500		\$17,625		\$17,208		\$16,000		\$17,318
Reason not working:											
in school full-time	1	20.0	2	28.6	3	60.0	8	53.3	7	70.0	51.2
can't find	2	40.0	1	14.3	0	-	2	13.3	0	-	11.6
gave up	0	-	0	-	0	-	1	6.7	1	10.0	4.7
ill/disabled	0	-	0	-	1	20.0	0	-	0	-	2.3
laid off	0	-	0	-	0	-	0	-	0	-	-
family responsibility	1	20.0	3	42.9	0	-	1	6.7	1	10.0	14.0
other	1	20.0	1	14.3	1	20.0	3	20.0	1	10.0	16.3
Con't Educ. after grad:											
no	16	59.3	12	57.1	25	58.1	60	63.2	41	68.3	62.2
CUNY, BA	4	14.8	6	28.6	12	27.9	25	26.3	7	11.7	22.1
BA, non-CUNY	3	11.1	1	4.8	5	11.6	4	4.2	8	13.3	8.8
grad, CUNY	0	-	0	-	0	-	0	-	0	-	-
grad, non-CUNY	0	-	0	-	0	-	0	-	3	5.0	1.2
other	4	14.8	2	9.5	1	2.3	6	6.3	1	1.7	5.6
Currently enrolled:											
Yes, full-time	4	30.8	2	22.2	6	31.6	14	36.8	11	57.9	39.0
Yes, part-time	7	53.8	4	44.4	7	36.8	10	26.3	5	26.3	33.0
No	2	15.4	3	33.3	6	31.6	14	36.8	3	15.8	28.0
Highest degree sought:											
Associate	2	12.5	0	-	0	-	1	2.4	0	-	2.7
Bachelor's	6	37.5	3	30.0	5	22.7	11	26.2	1	4.8	23.0
Master's	6	37.5	5	50.0	14	63.6	23	54.8	12	57.1	54.0
Professional	1	6.3	0	-	1	4.5	3	7.1	5	23.8	9.7
Ph.D.	1	6.3	2	20.0	2	9.1	4	9.5	3	14.3	10.6

Proportionately more delayed than on-time graduates held the same job during college and more had been working at this job for five to 10 or more years (see Table 10, page 36). This might explain the dissatisfaction or, alternatively, indicate that seniority brought new responsibilities, less related to the college curriculum. Some support for the latter interpretation is provided by respondents' ratings of the current jobs' potential for advancement; somewhat more on-time than delayed graduates felt their job offered "definite" advancement possibilities, while somewhat fewer felt **their job** provided "possible" opportunities for advancement. It is interesting to note that the same pattern prevailed for 1981 graduates with associate degrees in the business curricula.

Not expected is the salary of on-time and delayed graduates. Those in school longest were earning less (mean salary) than those who completed their degree requirements on-time, irrespective of the fact that the latter group had less time on the job. (Median salaries show a different pattern and one more compatible with the results for business majors. Compare Tables 10 and 5.) In contrasting the different fields, health graduates seem to be earning more money than business graduates, overall--also a somewhat unexpected finding.

Only 12.6 percent of the respondents were not working at the time they filled out the questionnaire: half because they were in school and attending on a full-time basis, the remainder for diverse other reasons. Most graduates, however, irrespective of completion rate, did not continue their education after graduating from community college. Of those that did, the majority went on for a baccalaureate degree at a CUNY college; currently, only about 40 percent are enrolled full-time. (These data are summarized in Table 10). There were virtually no differences in the educational activities of health or business program completers subsequent to their graduation from the community college.

Health graduates, however, tended to have slightly higher educational aspirations: proportionately more were looking toward a master's, professional, or doctoral degree. Aspirational level was related to completion rate for

graduates with health-related associate degrees and, typically, more recent graduates wanted more advanced training. Since the same pattern obtained for the business students as well, it is not than a simple matter that a particular field requires advanced training. It is also interesting that probably because on-time graduates spend fewer total years in study they are thus more willing than delayed graduates to contemplate additional years in the classroom.

Academic progress of graduates of health programs and cohorts. This section compares the transcripts of June 1981 graduates with degrees in the health-related curricula with those of cohort groups who enrolled in these same career programs. As was the case with the data dealing with business program students, transcripts were obtained for a random sample of cohorts enrolling in community college health programs in the Fall 1976, Fall 1977, and Fall 1978. Also similar is the make-up of the samples: graduates' transcripts are limited to those whose degree was in a health-related occupation, while the cohorts' samples were comprised of students whose major at the time of first enrollment was a health-related program.

Table 11 on the following page summarizes the major analyses. The first thing to note is the distribution of graduates by date of entry: almost one-quarter (23.6%) graduated in plus-two years, with another approximate quarter (25.8%) taking plus-one (i.e., one additional) year to complete their degree requirements; about 10 percent graduated on-time. (When compared with the distribution of questionnaire respondents by entry date, we see that the extremely delayed graduates completed the survey in larger than expected proportions, indicating a high level of interest and involvement in their education. We also found a higher-than-expected response rate to the questionnaire among the extremely delayed business-student group. These findings suggest that prolonged contact with an educational institution, no matter what its quality, produces unusually strong ties.)

The graduation rate among cohort groups noted in Table 11 (page 39) shows that groups in college longest had proportionately the greatest number of graduates. Interestingly, the health fields produce almost three times more

TABLE 11

Selected Information from Transcripts of June 1981 Graduates with Associate
Degrees in the Health-Related Curricula and of Cohorts from Three Years

TRANSCRIPT VARIABLES	Spring 76 or earlier		Fall 76- Spring 77		Fall 77- Spring 78		Fall 78- Spring 79		Fall 79- or later		TOTAL HEALTH							
	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts						
N transcripts	3	0	4	29	21	30	23	30	9	0	60	89						
% graduated	100.0	-	100.0	34.5	100.0	6.7	100.0	16.7	100.0	-	100.0	30.3						
Sex (% Male)	0	-	33.3	24.1	5.3	20.7	17.4	11.1	44.4	-	17.5	18.8						
Age: Mean	37.0	-	37.6	25.6	26.2	23.1	23.1	24.5	27.5	-	27.4	24.5						
Median	37.0	-	37.5	23.8	26.0	22.0	21.0	21.7	26.2	-	26.5	23.9						
H.S. program:																		
% academic	100.0	-	33.3	81.8	78.6	81.0	84.2	90.9	100.0	-	80.0	84.6						
% voc/tech	0	-	0	9.1	21.4	14.3	10.5	0	0	-	12.5	7.7						
% GED	0	-	66.7	9.1	0	4.7	5.3	9.1	0	-	7.5	7.7						
Address change(% yes)	0	-	0	3.4	4.8	0	4.4	0	0	-	3.3	1.1						
Change of major (% yes)	0	-	25.0	13.8	0	6.7	8.7	6.7	0	-	5.0	10.1						
% enrolled in 4 semes- ters, in-sequence	66.7	-	100.0	58.6	95.2	36.7	100.0	56.7	100.0	-	96.7	50.6						
Ave. N courses passed:																		
4 in-sequence	6.0	-	15.2	13.5	14.8	15.5	15.3	12.8	15.1	-	14.8	13.7						
4 not-in-sequence	2.0	-	0	6.3	12.0	4.1	0	4.1	0	-	7.0	4.7						
Ave. N withdrawals:																		
4 in-sequence	0.5	-	0.5	1.6	0.8	1.3	0.4	3.4	0.2	-	0.5	2.2						
4 not-in-sequence	3.0	-	0	1.2	0	4.2	0	1.7	0	-	1.5	2.6						
Ave. N courses failed:																		
4 in-sequence	0.5	-	0	0.5	0.4	1.4	0.2	1.1	0	-	0.2	1.0						
4 not-in-sequence	1.0	-	0	4.2	0	2.4	0	1.7	0	-	0.5	2.7						
	81 grads	G	NG	81 grads	G	NG	81 grads	G	NG	81 grads	G	NG	81 grads	G	NG			
Ave. N semesters enrolled in courses	16.0	-	-	11.5	6.8	3.9	8.1	7.0	3.6	6.6	8.4	3.8	5.1	-	-	7.7	4.6	3.8
Ave. N semesters missed in sequence	2.3	-	-	0	0.1	0.6	0.5	0	0.2	0	0	0.2	0	-	-	0.1	<.1	0.3
Ave. N probations	0	-	-	0	0	1.0	0.1	0	1.0	0	0.4	1.0	0	-	-	<.1	0.1	1.0
Ave. N dismissals	0	-	-	0	0	0.2	0.1	0	0.4	0	0	0.1	0	-	-	<.1	0	0.2
Ave. N honors	0	-	-	0	0	<.1	0.1	0.5	0	0.4	0	0	1.1	-	-	0.4	<.1	<.1

graduates--an overall graduation rate of 30.3 percent--than do the business areas.

Looking down Table 11, we see that, overall, males were no more likely than females to graduate (i.e., compare male graduates to male cohorts), and that there are fewer males in these curricula than in the business programs. Also noted is the association of age to both the proportion of students graduated and the rate of graduation. For whatever reason, perhaps seriousness of purpose, completion of one's studies is more likely among the older portion of the health student population and especially likely among older students who spend the most time in school.

As can be seen in Table 11, about 80 to 85 percent of health students (cohorts and graduates) came from academic high schools--somewhat greater proportions than found in the business programs; this may reflect different admissions requirements or some other self-selection process. Changing majors was remarkably unusual for students in health programs overall, and for graduates there was little or virtually no relationship between change of major and number of years required to graduation. In fact, for the June 1981 graduates of health programs, few if any variables were related to the number of years spent pursuing an associate degree. Thus, years spent in college tends not to be associated with the proportion of graduates whose first four semesters were in sequence, or with the average number of courses passed or failed, or with withdrawals from courses. The only such relationship concerns the average number of semesters graduates' enroll in courses, and this is primarily a matter of definition.

However, there were differences between graduates and cohorts. Proportionately more graduates enrolled in courses during their first four semesters in sequence, typically passed more courses, and failed and/or withdrew from fewer--whether or not the first four semesters were with or with no break (stop out). In much the same way, June 1981 graduates (as is also true of cohorts who graduated--C in Table 11) spent more semesters in school in which they were enrolled in courses, had fewer probations or dismissals on the average, and were awarded more honors.

The dramatic relationship that we saw for business students between graduation rate and number of semesters missed in sequence (i.e., the duration of the stop-out break) is not nearly as clear for June 1981 health graduates, although it shows up when graduating (G) and non-graduating (NG) cohorts are compared. However, we would expect that--with the lapse of still more time--most students will continue to enroll in courses and, sooner or later, will successfully complete all the work required of them to graduate.

Interestingly, whereas most if not all health graduates enrolled in courses in the first four sequential semesters following date of entry, this was true for only about half (50.6%) of all cohorts, for whom there was no relationship between total number of years in college and sequential enrollment in the first four semesters. This was not the case in the business programs where, as years spent in college increased, there was a decrease in the proportions of graduates, but an increase in the proportions of cohorts who were enrolled in four semesters in sequence.

What these data show is a generally unclear picture of the student in health-related career programs. The curricula comprising the HEGIS health codes enroll more female students, and are in this sense sex-stereotyped. Generally health students are older than business students on the average and graduates are older than cohorts--with a tendency for the older students to complete program requirements on-time. Large proportions of health students come from academic high schools, probably reflecting college programs' differential admissions requirements; proportionately more than expected numbers of students from academic high schools graduate on-time or closer-to-time.

Typically, health students tend not to change major, and having only one major was more usual among those in college longer, whether or not they were graduated. The health graduate also tends to enroll in courses during her/his first four semesters, passing somewhat more courses than the cohort, and failing fewer. When compared with the business graduate, the health graduate stops-out of college for shorter periods of time and likely loses less time as a result of probations or dismissals. Finally, and significantly, students

in these programs are several times more likely to graduate than are students pursuing an associate degree in a business-related curriculum.

ENGINEERING TECHNOLOGIES CAREER PROGRAM STUDENTS

The last group of students we examined were those in the engineering technologies. Questionnaires were completed by 101 such respondents, and these data are summarized in Tables 12-15, while transcripts were obtained for a total of 34 graduates and 114 cohorts; transcript data is presented in Table 16 on 53.

As we did in the previous sections, we will first discuss the experiences of June 1981 graduates as these were reported by questionnaire, then turn to the study of academic records to further understanding of the differences between on-time and delayed graduates.

Experiences of June 1981 graduates. Approximately 90 percent (88.2%) of the engineering technologies respondents were male, the vast majority of whom (69.6%) were single with no dependent children. (See Table 12, page 43.) While neither sex nor dependent children were differentially related to a number of years in school, such a relationship obtained for marital status: here, proportionately more on-time and plus-one year graduates were single, a trend also noted for business and health respondents.

Respondents' ethnicity, religious preference, and immigrant status also did not vary with number of years spent in college pursuing an associate degree. Not did the language(s) spoken "at home", or the educational level of the respondent's mother and father, as detailed in Table 12 on page 43. Similarly, family income level was not associated with rate of graduation (Table 13, page 45), which was also found to be the case for business and health graduates.

In comparing the three curricular groups on these demographic variables, we see substantial differences in the proportion of men students (88.2% of engineering, 52.9% of health, and 43.7% of business students were men), but smaller differences in marital status, ethnicity, religious preference,

TABLE 12

Self-Reported Background Characteristics of On-Time and Delayed June 1981
Graduates with Associate Degrees in the Engineering Technologies Curricula

DEMOGRAPHIC VARIABLES	Plus- four + (N=14)		Plus- Three (N=4)		Plus- Two (N=19)		Plus- One (N=43)		On-Time (N=21)		TOTAL ENGINEERING (N=101)
	N	%	N	%	N	%	N	%	N	%	%
Sex: Male	10	71.4	4	100.0	17	89.5	41	95.3	17	81.0	88.2
Current Marital Status:											
Single	5	35.7	2	50.0	13	68.4	35	81.4	16	76.2	69.6
Sep/Div/Wid.	0	-	0	-	1	5.3	0	-	4	19.0	4.9
Married	9	64.3	2	50.0	5	26.3	8	18.6	1	4.8	25.5
No. Dependent Children											
None	8	61.5	3	75.0	12	63.2	31	72.1	15	71.4	69.3
One/two	4	30.8	0	-	7	36.9	10	23.3	5	23.8	25.7
Three/four	1	7.7	1	25.0	0	-	2	4.7	1	4.8	5.0
Five or more	0	-	0	-	0	-	0	-	0	-	-
Ethnicity:											
Puerto Rican	1	7.1	0	-	2	10.5	2	4.7	1	4.8	5.9
Other Hispanic	1	7.1	0	-	0	-	4	9.3	1	4.8	5.9
Black	4	28.6	2	50.0	10	52.6	9	20.9	5	23.8	29.4
White	7	50.0	1	25.0	5	26.3	25	58.1	11	52.4	49.0
Other	1	7.1	1	25.0	2	10.5	3	7.0	3	14.3	9.8
Immigrant Status:											
None immigrant	6	42.9	1	25.0	9	50.0	21	48.8	7	35.0	45.0
Self/self & parents	3	21.4	3	75.0	6	33.4	12	27.9	9	45.0	23.0
One/both parents	5	35.7	0	-	3	16.7	10	23.3	4	20.0	22.0
Religious Preference:											
Catholic	7	50.0	2	50.0	6	33.3	26	65.0	11	61.1	55.8
Protestant	5	35.7	0	-	4	22.2	4	10.0	2	11.1	15.8
Jewish	0	-	0	-	1	5.6	1	2.5	1	5.6	3.2
No preference	2	14.3	1	25.0	5	27.8	6	15.0	3	16.7	17.9
Other	0	-	1	25.0	2	11.1	3	7.5	1	5.6	7.4
Handicapping Condition:											
Yes	1	7.1	0	-	0	-	0	-	2	9.5	2.9
Father's Education:											
8th grade or less	3	21.4	1	25.0	4	23.5	9	20.9	2	10.0	19.2
Some h.s.	1	7.1	0	-	2	11.8	5	11.6	6	30.0	15.2
H.S. graduate	6	42.9	1	25.0	4	23.5	14	32.6	7	35.0	32.3
Some college	1	7.1	0	-	3	17.6	8	18.6	2	10.0	14.1
Coll. graduate	1	7.1	1	25.0	1	5.9	2	4.7	0	-	5.1
Postgrad/Professional	1	7.1	1	25.0	0	-	3	7.0	0	-	5.1
Don't know	1	7.1	0	-	3	17.6	2	4.7	3	15.0	9.1
Mother's Education:											
8th grade or less	1	7.1	2	50.0	5	27.8	10	23.3	3	14.3	20.8
Some h.s.	4	28.6	0	-	3	16.7	8	18.6	6	28.6	21.8
H.S. graduate	7	50.0	1	25.0	5	27.8	19	44.2	6	28.6	37.6
Some college	0	-	0	-	3	16.7	3	7.0	1	4.8	6.9
Coll. graduate	0	-	1	25.0	0	-	2	4.7	1	4.8	4.0
Postgrad/Professional	1	7.1	0	-	1	5.6	0	-	1	4.8	3.0
Don't know	1	7.1	0	-	1	5.6	1	2.3	3	14.3	5.9
Language at "Home"											
Eng. only	8	57.1	2	50.0	13	68.4	24	57.1	12	57.1	59.4
Eng. plus	5	35.7	2	50.0	4	21.1	16	38.1	8	38.1	34.7
Another	1	7.1	0	-	2	10.5	2	4.8	1	4.8	5.9

educational level of parents, immigrant status, or in income level distribution.

The picture with respect to which "family" income (self or spouse vs. parents or guardian) was reported was the same for engineering as for business respondents--largely because the two groups' marital status was so similar--with both differing from the "family" of health students. As can be seen in Table 13, 60 percent of engineering students are presumed to have lived with their family while they were attending college, as did 58.8 percent of business students (see Table 3), but only 47.3 percent of health students (Table 8). And, as Table 13 (page 45) also shows, there was some relationship between the definition of "family" and the number of years in college: 21.4 percent of those in college plus-four years defined family income as parent income, compared to 66.7 percent of the on-time graduates who are presumed to have lived with their parents. Thus, once again we see evidence that the support provided by the parent (or guardian) family is associated with completing a two-year college career program on or closer-to-time.

For engineering students, as was so for the other two groups, how much they worked while attending college was very highly related to how speedily they met their graduation requirements. As can be seen in Table 13, proportionately more on-time and plus-one year graduates worked "mostly part-time" or were not employed at all. Compare this to the longer delayed groups, more of whom worked "mostly full-time", or a combination of full-time and part-time.

For most engineering technology students, the community college from which they graduated was their first college experience. Only about 28 percent had attended another college before (most likely a CUNY college). These data are comparable to those for the health respondents (27.5%), but both groups differ from the business students (of whom 19.1% attended another college before coming to the CUNY community college from which they graduated). Among engineering students, there was a slight relationship between having had a prior college experience and on-time or closer-to-time graduation, probably resulting from the accumulation of transfer credits.

TABLE 13

Self-Reported Demographic Attributes and College-Going Experiences of On-Time and Delayed June 1981 Graduates with Associate Degrees in the Engineering Technologies Curricula

INITIAL/IN-COLLEGE ITEMS	Plus-Four+ (N=14)		Plus-Three (N=4)		Plus-Two (N=19)		Plus-One (N=43)		On-Time (N=21)		TOTAL (N=101)
	N	%	N	%	N	%	N	%	N	%	%
AT CUNY, "Family" Income											
\$4,000/ <	1	7.1	0	-	3	16.7	2	4.7	2	9.5	8.0
4,000-7,999	2	14.3	1	33.3	4	22.2	6	14.0	4	19.0	17.0
8,000-11,999	2	14.3	0	-	4	22.2	10	23.3	5	23.8	21.0
12,000-15,999	1	7.1	2	66.7	4	22.2	6	14.0	1	4.8	14.0
16,000-19,999	3	21.4	0	-	1	5.6	4	9.3	3	14.3	11.0
20,000-23,999	2	14.3	0	-	2	11.1	6	14.0	3	14.3	13.0
24,000-27,999	0	-	0	-	0	-	1	2.3	1	4.8	2.0
28,000-31,999	2	14.3	0	-	0	-	5	11.6	0	-	7.0
\$32,000/ >	1	7.1	0	-	0	-	3	7.0	2	9.5	7.0
"Family" defined:											
Parents	3	21.4	0	-	9	50.0	34	79.1	14	66.7	60.0
Self/Spouse	11	78.6	3	100.0	9	50.0	9	20.9	7	33.3	40.0
Attend College before:											
No	11	84.6	4	100.0	17	89.5	33	76.7	16	76.2	81.2
Yes, CUNY	1	7.7	0	-	1	5.3	6	14.0	3	14.2	10.9
Yes, non-CUNY	1	7.7	0	-	1	5.3	4	9.3	2	9.5	7.9
First-enrollment:											
Full-time	6	42.9	2	50.0	16	84.2	38	88.4	20	95.2	81.4
Part-time	8	57.1	2	50.0	3	15.8	5	11.6	1	4.8	18.6
Enrollment Pattern:											
Only full-time	1	7.1	1	25.0	9	47.4	33	76.7	19	90.5	61.8
Mostly full-time	2	14.3	0	-	7	36.8	7	16.3	2	9.5	17.6
Half full-time	1	7.1	1	25.0	2	10.5	1	2.3	0	-	4.9
Mostly part-time	6	42.9	1	25.0	0	-	1	2.3	0	-	8.8
Only part-time	4	28.6	1	25.0	1	5.3	1	2.3	0	-	6.9
Interrupted Study:											
No	1	7.1	3	75.0	13	68.4	39	90.7	21	100.0	75.5
Change Major:											
No	9	64.3	4	100.0	15	78.9	32	74.4	20	95.2	78.4
Relation to Current Job to Major: (Mean)	(3.36)		(3.25)		(3.47)		(2.92)		(3.22)		(3.20)
Directly	4	36.4	1	25.0	4	26.7	12	48.0	3	33.3	36.9
Mostly	1	9.1	2	50.0	2	20.0	5	20.0	2	22.2	20.0
Somewhat	4	36.4	0	-	5	33.3	6	24.0	3	33.3	29.2
Not at all	2	18.2	1	25.0	3	20.0	2	8.0	1	11.1	13.8
Employment Pattern:											
Not employed	1	7.1	0	-	1	5.3	5	11.6	3	14.3	9.8
Mostly part-time	2	14.3	1	25.0	8	42.1	23	53.5	10	47.6	44.1
Mostly full-time	9	64.3	3	75.0	5	26.3	4	9.3	5	23.8	25.5
Full and part-time	2	14.3	0	-	2	10.5	6	14.0	3	14.3	12.7
Occasional	0	-	0	-	3	15.8	5	11.6	0	-	7.8

Most on-time graduates and large proportions of those graduating closer-to-time attended college in the first semester as a full-time student (as was also true, but to a lesser extent, for the business and for the health groups). Moreover, students who continued to attend on a full-time basis were more likely to graduate on-time, or with minimal delays, than those following a part-time enrollment pattern (see Table 13). In much the same way, proportionately more on-time than delayed engineering technology graduates did not change major. (Engineering technology and health graduates were both less likely, overall, than business graduates to have changed their program of study.)

Table 14 on the following page presents respondents' ratings of satisfaction with select aspects of college life and their opinions about the importance of various factors in helping pay for college costs. The most important revenue sources (the lower mean scores in the top half of the table) for engineering technology graduates were, in order: earnings from jobs they held during the regular school year, TAP, BEOG, and summer jobs and family support. (Earnings from jobs were more important to engineering than to business or to health respondents.) Of least importance in helping engineering technology students pay for college was veterans benefits, followed by SEEK/CD stipends and employer contributions, scholarships and SEOG.

When these revenue sources are examined by graduation rate there are some fairly consistent trends. As illustrations, the importance of earnings from jobs (summer and regular year) was positively associated with on-time graduation, as was TAP, BEOG, support from family, and scholarships. Inversely related to on-time completion was the importance of employer contributions and veterans benefits. Interestingly, there was no consistent relationship between number of years spent in school and personal savings (as was also true for business students, see Table 4, but was not the case for health graduates, see Table 9.) Thus, with the exceptions noted, all groups of graduates tended to rely on similar college-cost sources, many of which appear to be associated with delayed or on-time graduation.

TABLE 14

Important Sources of Financial Aid and Satisfactory College Services for On-Time and Delayed June 1981 Graduates with Degrees in the Engineering Technologies Curricula

COLLEGE COSTS, IMPORTANT FACTORS ^a	Plus-Four+ (N=14)	Plus-Three (N=4)	Plus-Two (N=19)	Plus-One (N=43)	On-Time (N=21)	TOTAL (N=101)
	Mean	Mean	Mean	Mean	Mean	Mean Score
TAP	2.33	2.25	1.53	1.64	1.81	1.78
BEOG/Pell	2.50	1.75	1.53	1.71	1.91	1.83
SEOG	3.00	2.25	2.57	2.73	2.80	2.74
SEEK/CD	3.00	3.00	2.67	2.89	2.95	2.88
GSL	2.82	1.67	2.13	2.53	2.75	2.52
NDSL	3.00	2.33	2.27	2.74	2.79	2.69
Summer jobs	2.50	2.25	2.00	1.89	1.65	1.96
Personal savings	1.91	2.00	2.20	2.10	2.05	2.07
School yr. jobs	2.00	1.25	1.71	1.72	1.48	1.68
Family support	2.09	2.67	2.33	1.68	2.00	1.96
Veterans Benefits	2.54	3.00	2.86	3.00	2.90	2.90
Empl. contribution	2.60	3.00	2.86	2.95	3.00	2.88
Scholarships	2.91	3.00	2.86	2.81	2.60	2.79
COLLEGE LIFE, SATISFACTION ^b						
Academic Advis.	2.64	4.00	3.00	2.94	3.00	2.91
Finan. Aid Coun.	2.43	2.67	2.65	2.96	2.92	2.78
Equipment	3.21	3.00	3.42	3.44	3.30	3.36
Remedial Instr.	3.44	3.00	3.07	3.11	3.09	3.14
Employ. Serv.	2.00	3.00	2.40	2.75	2.77	2.61
Co-op Educ.	1.00	3.00	2.43	2.12	2.43	2.29
Orientation	2.50	3.00	2.73	2.74	2.85	2.75
CD/SEEK	1.00	-	2.67	2.67	2.50	2.50
Serv. for Handic.	2.00	-	1.50	3.00	3.33	2.57
Career Couns.	2.29	-	2.62	3.00	2.54	2.71
Classroom Instr.	3.29	3.00	3.16	3.21	3.33	-
Jobs related to Major	2.69	2.25	2.56	3.00	3.10	-
Course Material	3.21	2.75	3.10	3.12	3.10	-
Admiss. Info.	2.79	2.50	2.26	2.63	2.90	-
Class Size	2.86	2.75	2.79	2.89	3.10	-
Meeting Instru.	2.54	2.50	2.78	3.22	3.19	-
Interesting Cour.	3.07	3.00	2.79	3.00	2.71	-
Helpful Staff	2.86	3.00	2.90	2.72	2.86	-
Job Place. Serv.	2.54	2.33	2.16	2.74	2.76	-

^aThe higher the mean score, the less important the financial aid.

^bThe higher the mean score, the more satisfactory the quality of the service.

As far as reactions to college experiences and activities, engineering technology graduates' responses are shown in the bottom half of Table 14. In examining these data, it is important to bear in mind that the higher the mean score, the more satisfied the respondent. For the 10 factors for which overall means were computed, there was a wide range of satisfaction--from 2.29 for cooperative education to 3.36 for the laboratory equipment.

For several factors, there was also a relationship between satisfaction and speed of completion, especially when the scores of the extreme groups are compared. Proportionately more on-time than plus-four years graduates were satisfied with academic advising, financial aid counseling, employment services, cooperative education, the SEEK/CD program, class size, the opportunity to meet instructors outside of class, and job placement services. On the other hand, on-time graduates were less satisfied than the plus-four group when it came to remedial instruction, the course material, and the availability of interesting courses. As we saw with the business students, there were no group differences with respect to the helpfulness of staff or the quality of classroom instruction.

The results reported in Table 14 for engineering students, and those in Table 4 and 9 for business and health students, respectively, illustrate differences among these three curricular groups that appear to be more dramatic--larger--than any differences among them in background or demographic characteristics would suggest. In other words, certain in-school experiences are differentially related to curriculum. We will return to this below.

Next, we will examine the experiences of June 1981 engineering technology graduates during the year following completion of their associate degree requirements: their subsequent education and employment histories are summarized in Table 15, page 49. Comparable numbers of engineering technology and business graduates were working full-time (approximately 63%) but, overall, somewhat fewer than health graduates. About 20 percent (21.6%) of engineering

TABLE 15

After Graduation Activities of On-Time and Delayed June 1981
 Graduates with Associate Degrees in the Engineering Technologies Curricula

CURRENT EMPLOYMENT/ EDUCATION STATUS	Plus-four+ (N=14)		Plus-three (N=4)		Plus-two (N=19)		Plus-one (N=43)		On-Time (N=21)		TOTAL (N=101)
	N	%	N	%	N	%	N	%	N	%	%
Presently:											
Working full-time	11	78.6	4	100.0	15	78.9	25	58.1	9	42.9	63.7
Working part-time	1	7.1	0	-	0	-	8	18.6	6	28.6	14.7
Not working	2	14.3	0	-	4	21.1	10	23.3	6	28.6	21.6
Job search time:											
Had job	7	63.6	2	50.0	8	53.3	6	24.0	1	11.1	38.5
2 mos. or less	2	18.2	0	-	5	33.3	14	56.0	3	33.3	36.9
3-6 mos.	2	18.2	1	25.0	2	13.3	3	12.0	2	22.2	15.4
7 or more mos.	0	-	1	25.0	0	-	2	8.0	3	33.3	9.2
How long employed:											
1 year	2	22.2	1	33.3	5	33.3	6	46.2	4	100.0	40.0
1-2 years	0	-	0	-	5	33.3	5	38.5	0	-	22.2
2-5 years	3	33.3	1	33.3	5	33.3	1	7.7	0	-	22.2
5-10 years	2	22.2	1	33.3	0	-	1	7.7	0	-	11.1
More than 10 years	2	22.2	0	-	0	-	0	-	0	-	4.4
Potential:											
Definite	3	27.3	2	50.0	7	46.7	12	48.0	4	44.4	43.1
Possible	4	36.4	1	25.0	4	26.7	8	32.0	4	44.4	33.8
Little/None	3	27.3	0	-	1	6.7	3	12.0	1	11.1	12.3
Temporary	1	9.1	1	25.0	3	20.0	2	8.0	0	-	10.8
Annual gross salary:											
Mean	\$20,682		\$17,500		\$12,800		\$14,300		\$14,556		\$16,566
Median	\$21,833		\$15,000		\$13,750		\$14,583		\$15,500		\$15,125
Reason not working:											
In-school full-time	0	-	0	-	3	75.0	8	72.7	8	100.0	76.0
Can't find	1	50.0	0	-	1	25.0	3	27.3	0	-	20.0
Gave up	0	-	0	-	0	-	0	-	0	-	-
Ill/disabled	1	50.0	0	-	0	-	0	-	0	-	4.0
Laid off			0	-	0	-	0	-	0	-	-
Family responsibility	0	-	0	-	0	-	0	-	0	-	-
Other			0	-	0	-	0	-	0	-	-
Cont. educ. after grad:											
No	8	61.5	1	25.0	9	47.4	18	42.9	6	30.0	42.4
CUNY, BA	2	15.4	2	50.0	4	21.1	7	16.7	5	25.0	21.2
BA, non-CUNY	3	23.1	1	25.0	5	26.3	15	35.7	9	45.0	33.3
Grad, CUNY	0	-	0	-	0	-	0	-	0	-	-
Grad, non-CUNY	0	-	0	-	0	-	1	2.4	0	-	1.0
Other	0	-	0	-	1	5.3	1	2.4	0	-	2.0
Currently enrolled:											
Yes, full-time	0	-	0	-	4	40.0	16	64.0	12	85.7	55.2
Yes, part-time	4	80.0	1	33.3	3	30.0	2	8.0	2	14.3	22.4
No	1	20.0	2	66.7	3	30.0	7	28.0	0	-	22.4
Highest Degree sought:											
Associate	0	-	0	-	1	10.0	1	4.0	0	-	3.4
Bachelor	2	33.3	0	-	2	20.0	7	28.0	5	35.7	27.1
Master's	2	33.3	2	66.7	6	60.0	14	56.0	8	57.1	55.9
Professional	-	-	0	-	0	-	1	4.0	0	-	1.7
Ph.D.	2	33.3	1	33.7	1	10.0	2	8.0	1	7.1	11.9

graduates were not employed, compared with 23.4 and 12.6 percent of business and health graduates, respectively. There are either more jobs available for health than for business or engineering technologists, or, alternatively and perhaps relatedly, less demand for health graduates to continue their education.

As expected, proportionately more delayed than on-time graduates were currently employed full-time, with greater proportions having worked longer or at jobs they held prior to graduation. Job search time for engineering graduates tended to be inversely associated with graduation rate: proportionately more on-time graduates spent longer periods of time looking for their current job--but this is a function of fewer of them being employed prior to graduation.

On-time or closer-to-time graduates were more likely than the delayed graduates to describe their current job as having "definite" or "possible" potential for advancement, despite the fact that they earned considerably less money. This suggests that delayed graduates may be approaching the upper limits of the career ladder, in terms of both potential and financial remuneration.

As can be seen in Table 15, (page 49), 76 percent of the graduates who were not working at the time of the survey were unemployed because they were in school on a full-time basis; only a total of five people could not find a job. Of the total group of respondents, 77.6 percent were currently enrolled in educational programs, although only about 58 percent continued in school immediately after graduation from the two-year college. Typically, the delayed graduate was less likely than the on-time graduate to continue schooling or to be going to school a year later when the questionnaire was administered. The same pattern tended to prevail for business and health graduates.

Most graduates who were enrolled in school at the time the survey was administered or who had continued their education after graduation were pursuing a baccalaureate degree from a CUNY institution. And while a sizable proportion (27.1%) of engineering technology graduates aspire to this level of education, more than twice as many indicated they wanted a master's degree (55.9%) or doctorate (11.9%). Their educational aspirations are more similar to the health than to the business respondents.

In summary, based on questionnaire data, the typical June 1981 graduate of CUNY's engineering technologies programs is likely to have taken one year longer than the two-year program sequence to graduate, is more likely to be male than female, single at the time of graduation, and with no dependent children. He will describe himself ethnically as White, with either himself alone or with one or both parents being immigrants to this country, and most probably Catholic. Most of these factors do not relate to the number of years graduates took to complete their education, although more on-time graduates were male, single, and with no dependent children.

Furthermore, there is no relationship between parents' level of formal education and how many years the graduate spent in college, nor between years in school, language(s) spoken at home, or family income level. As we saw for the other curricular groupings, however, family definition was associated with completion and in the direction that "parent"-family was strongly related to on-time or closer-to-time graduation.

Most graduates, especially on-time ones, started CUNY and attended community college on a full-time basis. They reported that at CUNY their studies were not interrupted, nor did they change major. Most worked while they went to college, and the more time spent working, the greater the likelihood that graduation was delayed.

Currently, more than 60 percent of engineering technology graduates were working full-time at a job directly related to what they studied in school and which they had before they graduated. The longer they had been working, the longer they spent in school and the more likely they were to earn higher salaries. More than half had continued their education after graduation, but this was less usual among graduates who had been in school longer. Currently, about three-quarters are in school, probably CUNY, and probably pursuing a bachelor's or master's degree.

While in college, they paid for costs primarily from earnings from jobs of their own, and from TAP and BEOG. Family support was also important to engineering technology students, but not as important as it was for other groups. The

relative importance of various forms of financial support were associated with differential completion rates. Similarly, delayed and on-time graduates differed with respect to how satisfied they were with some select school experiences and, generally, on-time graduates were more satisfied with more of those rated.

Finally, engineering graduates resembled business graduates in many ways; in still other respects, there was a closer match with graduates of the health-related curricula. Generally, however, length of time spent in completing the associate degree requirements was more distinguishing than was curriculum.

Academic progress on June 81 graduates and cohorts. Table 16 on page 53 presents the analyses of transcripts for another sample of June 1981 graduates and for cohorts who entered engineering technologies programs in the Fall of each of three academic years: 1976, 1977, 1978. In assessing these data, it is important to keep in mind the criteria for the initial selection of transcripts and the resultant differences among the major analytic groups.

The first thing of note is the distribution of graduates' by length of time spent completing the degree requirements: 20 percent of the total of 35 June 1981 graduates graduated on-time, and another 20 percent took plus-four years; most of the remainder needed one or two additional years to finish their community college education. These figures compare favorably with the proportions of on-time and closer-to-time business and health graduates.

Next, is the graduation status of the cohorts. In total, only about 8 percent (7.9%) of students whose first enrollment was in engineering technologies programs in the Fall 1976, Fall 1977, and Fall 1978 had completed their studies by 1982. This percentage is roughly equivalent to the 11 percent noted for the business programs, but both are markedly lower than the proportion completing health-related curricula.

As expected, almost all engineering students were men, but proportionately more women graduate--and on-time or in plus-one years. Worthy of additional research is whether the opposite sex (women in this instance) in sex-stereotyped curricula tend not to persevere when requirements are not quickly met.

TABLE 16

Selected Information from Transcripts of June 1981 Graduates with Associate Degrees
in the Engineering Technologies Curricula and of Cohorts from Three Years

TRANSCRIPT VARIABLES	Spring 76- or earlier		Fall 76- Spring 77		Fall 77- Spring 78		Fall 78- Spring 79		Fall 79- or later		TOTAL	
	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts
N transcripts	7	0	4	45	8	40	9	29	7	0	3.5	114
% graduated	100.0	-	100.0	17.8	100.0	2.5	100.0	0	100.0	-	100.0	7.9
Sex (% Male)	100.0	-	100.0	97.6	100.0	100.0	87.5	96.6	57.1	-	88.2	98.2
Age: Mean	31.0	-	26.5	23.1	21.4	22.9	20.7	22.7	22.3	-	23.5	24.3
Median	31.0	-	26.5	22.4	21.8	22.1	20.5	21.0	22.3	-	23.0	22.1
H.S. program:												
% academic	33.3	-	66.7	66.7	62.5	53.8	66.7	33.3	33.3	-	56.5	53.8
% voc/tech	66.7	-	33.3	33.3	37.5	46.2	33.3	42.9	66.7	-	43.5	40.0
% GED	0	-	0	0	0	0	0	23.8	0	-	0	6.2
Address change (% yes)	0	-	0	4.4	0	2.5	0	0	0	-	0	3.8
Change of major (% yes)	28.6	-	50.0	8.9	0	2.5	50.0	6.9	0	-	20.0	6.1
% enrolled in 4 semesters, in-sequence	71.4	-	100.0	60.0	100.0	50.0	100.0	31.0	100.0	-	91.4	49.1
Ave. N courses passed:												
4 in-sequence	12.8	-	14.8	11.4	16.1	12.6	17.3	10.6	13.7	-	15.8	9.9
4 not-in-sequence	10.0	-	0	4.7	0	4.2	0	5.2	0	-	6.7	4.7
Ave. N withdrawals:												
4 in-sequence	2.6	-	2.2	2.0	1.2	3.0	1.4	2.8	0.4	-	1.4	2.5
4 not-in-sequence	7.5	-	0	2.0	0	1.5	0	3.0	0	-	5.0	2.2
Ave. N courses failed:												
4 in-sequence	0.2	-	1.0	2.2	0.2	1.4	1.0	1.8	0	-	0.5	1.9
4 not-in-sequence	0	-	0	1.5	0	0.5	0	1.1	0	-	0	1.0
	81 grads		81 grads		81 grads		81 grads		81 grads		81 grads	
Ave. N semesters enrolled in courses	10.3	-	11.0	6.5	7.0	4.0	5.8	0	4.3	-	7.6	6.2
Ave. N semesters missed in sequence	2.3	-	0.5	0.6	0	0	0.1	0	0	-	0.6	0.6
Ave. N probations	0	-	2.8	0.8	0.1	0	0	0	0	-	0.3	0.7
Ave. N dismissals	0	-	0.8	0.2	0.1	0	0	0	0	-	0.1	0.2
Ave. N honors	0.3	-	0.2	0.8	0.1	0	1.6	0	1.7	-	0.8	1.1

Of all three curricular groups, proportionately fewest engineering graduates came from academic high schools; they were more likely to be graduates of vocational and technical secondary schools. Interestingly, students from the academic high schools took longer to complete their college studies; fewer than expected graduated on-time. Also of interest was the relatively large proportion of graduates who changed major: overall, 20 percent, a figure double that for business majors and even more than for health graduates. Note that no on-time engineering technology graduate changed major, although here the N's are very small.

A striking difference between graduates and cohorts was in the proportion who enrolled in courses sequentially in the first four semesters following initial enrollment--91.4 percent of graduates and 49.1 percent of cohorts. This difference of approximately the same magnitude obtained in the other two curricular fields as well. Clearly this variable distinguishes the community college graduate from the typical cohort, irrespective of career program--but does not relate to graduation rate (the number of years to complete course requirements). For community college students generally, length of time elapsing between date of initial entry and completion (or examination of transcripts) is largely a function of the number of courses passed in each of the semesters that courses were taken.

As Table 16 on page 53 shows, except for those who graduated on-time (and probably with transfer credits from another institution), there was a relationship between the number of courses passed per semester and length of time spent in college to complete the engineering program and graduate. The plus-one year group passed, on the average, 17.3 courses in four sequential semesters (10.6 courses for cohorts), as contrasted with 14.8 courses for the plus-three year group (11.4 courses for cohorts). These data illustrate that graduation is related to passing courses and speedier graduation to passing more courses each semester.

Graduates typically withdrew from fewer courses than cohorts. Neither withdrawals or failures were differentially associated with graduation rate

for engineering technology students, although this relationship was suggested for business program students (see Table 6).

As we found before, June 1981 graduates and graduating cohorts (G) tend to take a longer stop-out break than do non-graduates (NG, see Table 16). For engineering students, the length of the break was, as expected, related to the number of years in college; longer breaks characterized the plus-four and plus-three years graduates (and cohorts), while on-time and plus-one year students had shorter absences. A similar pattern obtained for graduates of the business-related programs.

Proportionately fewer engineering technology graduates and graduating cohorts had probations or dismissals noted on their records, and proportionately more of them than of non-graduates had received some kind of academic honor. For engineering students, there was a tendency for proportionately more probations and dismissals among students in school longer and, relatedly, for these groups to receive fewer honors. These data suggest again that, in addition to being more likely to enroll in and pass more courses, on-time and closer-to-time graduates may be more able academically. What best distinguishes the on-time from the extremely delayed engineering technology graduate is the number of semesters he went to school, the average number of courses passed in his first four semesters and, for those delayed graduates who stopped-out, the number of semesters that were missed.

In the conclusions below, we will look at these data from other viewpoints--first, by curricular area irrespective of date of entry and, second, by date of entry ignoring curriculum--to highlight characteristics that relate to rate of completion of two-year college career programs.

CONCLUSIONS

What are the background differences, college experiences, and after graduation activities of June 1981 graduates with associate degrees in business-related, health related, and engineering technologies programs? Based on questionnaire

data, it is apparent that the sex composition of the groups of respondents was dramatically different and was related to marital status.¹ The engineering technologies programs, which are predominately male, had the highest proportion of single people, while the health curricula, predominately female, had the fewest single respondents. Ethnically and religiously, the programs were generally comparable, except that slightly more June 1981 health student graduates (than business or engineering ones) were White, Jewish, and less likely to be comprised of Asians or Native Americans ("other" --more of whom characterized the engineering technologists).

While there were few differences in parents' level of formal schooling, there were somewhat greater variations in immigrant status and, relatedly, language(s) spoken at "home". Somewhat more of the engineering graduates' parents or parents and self migrated here, and this is reflected in proportionately greater numbers whose "home" language was English plus another language, or another language alone. By and large, neither schooling level nor immigrant status manifests itself as large differences in "family" income, although the family income level of engineering students tended toward the lower end of the scale.

However, "which family" income was reported was crucial: more business and engineering than health graduates reported parent (or guardian) income and are, therefore, presumed to have lived with their parents during their college years (probably because the men were not married). Living with parents permitted engineering technology students to work mostly part-time, enabling more to attend college on a full-time basis. But note that it was the health group--predominantly female--who tended not work at all while in school, although not working did not provide significantly more of them the opportunity to go to college on "only a full-time basis". This seeming inconsistency suggests that the health students, married women, were attending to their own family (i.e., spouse and children) responsibilities.

¹This is based on data previously presented in Tables 2-5, 7-10, and 12-15, which contain a total column for each curricular area that is irrespective of date of first enrollment in the community college.

With respect to how they experienced college life and paid the costs associated with going to school, the three different groups reacted more similarly than not, although there were some variations, particularly pertaining to finances. For business students, earnings from school year jobs, TAP, BEOG, and personal savings were the most important sources of funds. For health students, most important was TAP, BEOG, family support and earnings from school-year jobs. The engineering technologies respondents ranked earnings from jobs most important, followed by TAP, BEOG, and family support. The other interesting difference pertained to the role of employer contributions, which were more important to the business graduates than to the other two groups, and reflects the fact that so many more of them were employed full-time during their college years. Despite these variations, however, it is clear that many the same sources of financial aid are important to June 1981 graduates irrespective of curriculum and of length of time spent in college.

Turning next to what June 1981 graduates reported doing in the year following completion of their associate degree requirements, more health than other graduates were working, and most were working full-time. The major reason that graduates were not employed when the questionnaire was administered was because they were in school full-time. Other important reasons for not working was that the health graduates had "family" and "other" responsibilities, while more business and engineering graduates "couldn't find a job."

As has been noted, business graduates (more so than the others) were working at a job they had had prior to graduation from community college and had been employed on the job longer--five or more years. Nonetheless, they were no different from the business and engineering technologies graduates in their opinions about the job's potential for advancement even though their jobs were assessed to be "not at all" or only "somewhat" related to their major. The poor relationship between college major and work suggests, as one possibility, that many students choose a business curriculum in order to change jobs from essentially low-paying ones with limited potential.

After graduation from community college, many more business graduates continued their education (usually at another CUNY institution). Health graduates, in contrast, tended not to pursue a more advanced degree, but, of those who did, a CUNY college was also the most probable choice. Interestingly, most of the engineering technology graduates who continued their education did so at a non-CUNY college. Business graduates were evenly divided in their educational aspirations, with a total of about 80 percent wanting a bachelor's (42.8%) or a master's (40.9%) degree. For health and for engineering graduates, the trend was toward higher degrees--bachelor's 23.0 and 27.1 percent, respectively; master's 54.0 and 55.9 percent, respectively.

In summary, when the questionnaire data is examined by curricular grouping and completion rate is ignored, there were some basic demographic differences among the groups--particularly composition by sex and marital status, which relate to the household graduates lived in and to whether graduates worked during their schooling. However, neither their different background characteristics nor their different work and home obligations impacted in any differential way on how they experienced college life. Furthermore, these demographic variables did not appear to be associated with educational activities they engaged in subsequent to completion of the associate degree. Variations that existed in these areas strongly relate to the demands the job market places on people in certain occupational fields for more advanced education and to the current opportunities for finding work. To some extent, graduates' educational aspirations for the future reflect these realities.

For the different programs (irrespective of length of time in college), does the academic progress of graduates vary significantly from the progress made by cohorts who started college with them? As we saw above, there were some consistent trends.¹ First as noted, there was a difference in the proportions

¹The data on which these conclusions are based were presented in the Totals columns of Tables 6, 11, and 16.

of students graduated by program area: almost three times as many health than business or engineering technology students graduated. Furthermore, there was some difference in the sex composition of graduates--overall, more than expected proportions of women engineering students and fewer women business students who entered community college between the Fall 1976 and the Fall 1979 had graduated by 1982.

While in college, most students did not change their major program of study with the exception of the graduates of engineering technologies, about one-fifth of whom had changed to engineering. Health graduates were least likely to have changed major, suggesting that the helping occupations tend to attract seriously dedicated students with firm career decisions.

As expected, in all curricula, graduates not only are more likely than cohorts to attend college regularly--almost all enrolled in courses during the first four sequential semesters from date of initial entry--but they pass more courses, withdraw from fewer, and had fewer failures. Moreover, June 1981 graduates and cohorts who had graduated not only enrolled in courses during more of the semesters intervening between entry and examination of transcripts, but also tended to have breaks from school of as long as or longer than cohorts who had not yet graduated.

Business students, particularly graduates, took the longest breaks from college, probably because of their job and family responsibilities; health students typically miss less time from class. While small numbers of students are out of class because of probations or dismissals, this is less likely of graduates who tend to be more able academically and receive more honors and awards.

Generally, there were few and insignificant variations in academic progress from curriculum to curriculum. There were greater differences between graduates and cohorts overall, and these pertained principally to sequential enrollment in courses in the initial years and to the number of courses taken and subsequently passed. For all groups, of much less importance to eventual graduation was stopping out of college temporarily, despite the number of semesters missed.

Which, if any, variables relate to the fact that some graduates complete their degree requirements in two or fewer years and why others require an additional one, two, three, or four or more years? In the Results section we examined graduates of each of the three curricula separately; here, curricula are combined enabling us to look at graduation rate across three programs of study.¹

There was a clear relationship between marital status and length of time in college: "singleness" was associated with graduating on-time or closer-to-time, as was having no dependent children. Although the language(s) spoken at home was not a factor in the time graduates spent pursuing an associate degree, respondents' immigrant status may be related: graduates who were themselves immigrants to this country (together with one or both parents) were overrepresented among delayed graduate groups. There was a slight indication that religious preference may be differentially related to graduation rate: proportionately more Jewish people graduated on-time, while graduation was delayed for proportionately more Protestant people.

While family income level was not a factor in how long it took students to complete their degree requirements, "family" definition was important--graduates who reported parent income were more likely to graduate on-time, and this pattern held up consistently. Working mostly part-time was also associated with on-time graduation, with mostly full-time work related to delayed graduation.

Not only were on-time graduates more likely to have started college on a full-time basis, but they were also much more likely to have attended full-time only and, furthermore, not to have changed majors while in the two-year college. Thus, indirectly, parents provide forms of support necessary for speedy completion of college requirements.

¹Tables B1-B5 in Appendix B summarize the questionnaire and the transcript data for students by date of entry, collapsed across curriculum.

From their ratings of satisfaction with selected aspects of college life, we conclude that there were few or virtually no differences in in-school experiences that either furthered or impeded graduation. However, there were larger and more relevant differences in how on-time and delayed graduates paid their college costs. TAP and BEOG (but not SEOG) were more important to on-time graduates than they were to delayed graduates--as were earnings from summer jobs and support from the family. Delayed graduates tended to rely more on employer contributions, on earnings from school year jobs, and on personal savings to pay for college costs. These ratings are consistent with the groups' demographic characteristics, and indicate that delayed graduation directly or indirectly is associated with the students' need to work during college.

At the time the survey was administered, most graduates were working full-time with delayed graduates more likely to be employed than on-time ones, partially because many more delayed graduates had their present job prior to graduation. As a result, delayed graduates were more likely to have been employed for long periods of time--two to five to 10 or more years; their annual gross salary was higher, which itself suggests job seniority.

Approximately equal proportions of on-time and delayed graduates had continued their education after meeting their associate degree requirements, and were most likely to have enrolled in a baccalaureate program at a CUNY college. However, one year later, it was more usual for on-time graduates to be in school on a full-time basis, suggesting that the others completed their additional training or dropped out. Whether or not one graduated on-time or in plus-four or more years does not affect how one feels about additional education, however: the majority of questionnaire respondents in all groups aspired to more advanced education--the bachelor's level but more often, the master's level.

When the total of 509 transcripts of June 1981 and cohorts arranged by year of entry into the CUNY community college were examined, the first thing of note was that 26.2 percent of June 1981 graduates completed their studies

on time, while an additional 37.8 percent were delayed by only one year. However, based on cohort data, only 5.3 percent of cohorts who entered college in the Fall 1978 (plus-one year) had graduated. With two more years of time, the graduation rate of cohorts reached a high of 25.8 percent; this is a disturbing low proportion of students.

Males predominate in each entering year (because of the large, disproportionate number of men engineering technology students), although in more recent years in these three combined curricula there has been a slight decrease in the proportion of male enrollees, reflecting a small increase in the number of women in the here-to-fore male dominated engineering and business fields. Women, overall, took fewer years to meet their degree requirements and graduate.

In recent years the business, health, and engineering technologies curricula witnessed a decrease in enrollees from academic high schools: from 72.7 percent in Fall 1976 to 59.4 percent in Fall 1979 or later. There is some evidence, not consistent across years, that graduates from academic high schools graduate from college in disproportionately high numbers and, moreover, closer to on-time.

Enrolling in courses in four semesters from date of entry without a break was also associated with on-time graduation. Proportionately more students who graduated on-time or closer-to-time enrolled in four sequential semesters than did the more delayed groups. It should be noted, however, that irrespective of speed of graduation, taking no breaks in the first four semesters was also positively related to graduation status: in each entry group, proportionately more graduates than cohorts attended college for the first four semesters without a break.

June 1981 graduates and graduating cohorts attended classes during more semesters on the average than did cohorts who had not (yet) graduated. And, of course, graduates who spent more years in college were enrolled in courses during more semesters than were graduates who spent fewer total years pursuing an associated degree.

As was described earlier, no transcript obtained for this study showed more than one stop-out break. These, however, varied in duration: graduates who took plus-four years, for example, had a break of 2.8 semesters on the average, in contrast to the .2 semesters' absence of plus-two years graduates. Thus, length of stop-out is associated with graduation rate. Graduates who were in college for more years had longer absences than those in school fewer years. The data are not as clear with respect to graduation status and length of stop-out, although there was some suggestion that graduates took longer breaks than their non-graduating cohorts. Perhaps a stop-out is preferable to failing courses, withdrawing from them, or dropping out of college altogether and is employed by students as a way of regrouping resources without leaving college altogether.

Despite the fact that graduates passed more courses in four semesters than did cohorts (irrespective of whether their first four courses were taken sequentially or not), the average number of courses passed in the first four semesters was not associated with the total time students spend in college: indeed, regular attendance during the first four terms was a much better predictor of whether the student would eventually graduate. The average number of withdrawals, however, was related to length of completion time, with proportionately more withdrawals characteristic of delayed graduates. (There were no consistent trends with respect to graduation rate and average number of courses failed, but clearly, withdrawing from courses was more likely among cohorts than among graduates in every entry-date group.)

The average number of probations, dismissals, and honors also related to graduation rate. In comparison to on-time or closer-to-time graduates, delayed graduates had proportionately more probations and dismissals from college and earned proportionately fewer honors. Thus, another factor that apparently impedes speedy graduation is ability. More academically able or academically oriented community college students will graduate and, more likely, in fewer years than their cohorts.

APPENDIX A

SURVEY QUESTIONS*

*NOTE: This appendix contains the questions, in numerical order, comprising the survey of June 1981 Graduates of the CUNY community colleges.

The City University of New York

Survey of June 1981 Graduates

1. [18] At the present time are you
- 1 ☐ Working full-time
 - 2 ☐ Working part-time
 - 3 ☐ Not working now
- } PLEASE GO TO Q. 2.
PLEASE GO TO Q. 12.

2. [19] Since graduating from CUNY, how long did it take you to find the job you have now?
- 1 ☐ I worked in this job before graduating
 - 2 ☐ 2 months or less
 - 3 ☐ 3 - 6 months
 - 4 ☐ 7 or more months
- } PLEASE GO TO Q. 4

3. [20] How long have you held this job?

- 1 ☐ about 1 yr.
- 2 ☐ 1 yr. - 2 yrs.
- 3 ☐ 2 yrs. - 5 yrs.
- 4 ☐ 5 yrs. - 10 yrs.
- 5 ☐ over 10 yrs.

4. Whom do you work for and what kind of work do you do?

[21-23] Employer _____

(Name of employer or organization.)

[24-26] Specific job title _____

(Salesperson, teacher, engineer, auto mechanic, data processor, etc.)

5. [27] How related is your job to the major/program you were enrolled in at CUNY?

- 2 ☐ Directly related
- 3 ☐ Mostly related
- 4 ☐ Somewhat related
- 5 ☐ Not related at all

6. [28] Which statement best describes how you regard your job?

- 1 ☐ Employment with definite potential for advancement
- 2 ☐ Employment with possible potential for advancement
- 3 ☐ Employment with little or no potential for advancement
- 4 ☐ Temporary employment until I can find something else

7. [29] In your job, are you self employed or do you work for someone else?

- 1 ☐ Self employed) PLEASE GO TO Q. 8.
- 2 ☐ Someone else) PLEASE GO TO Q. 9.

8. [30] If you are self employed, are there any people who work for you and are paid by you?

- 1 ☐ No.
- 2 ☐ Yes, # of people _____

9. [31] Do you supervise anybody as part of your job?

- 1 ☐ No.
- 2 ☐ Yes, # of people _____

10. [32] Overall, how satisfied are you with your job?

- 1 ☐ Very satisfied
- 2 ☐ Satisfied
- 3 ☐ Dissatisfied
- 4 ☐ Very dissatisfied

11. [33-37] What is your present annual salary before taxes?

\$ _____ (yearly salary) } PLEASE GO TO Q. 13

12. [38] What is the main reason you are not working now?

- 1 ☐ Continuing my education full-time
- 2 ☐ Looking for a job but unable to find anything suitable
- 3 ☐ Gave up looking, unable to find any job
- 4 ☐ Illness or disability
- 5 ☐ Laid off from my last job
- 6 ☐ Family responsibilities
- 7 ☐ Other (please specify) _____

Questions thirteen through fifteen ask about your educational experiences since graduation

13. [39] Since your graduation, have you enrolled in another educational program?
- 1 ☐ No|PLEASE GO TO Q. 17
- 2 ☐ Yes, bachelor's program at CUNY
- 3 ☐ Yes, bachelor's program at college other than CUNY
- 4 ☐ Yes, graduate or professional program at CUNY
- 5 ☐ Yes, graduate or professional program at college other than CUNY
- 6 ☐ Yes, other educational program
- (please describe) _____

PLEASE
CONTINUE
WITH Q. 14

14. [40] Are you currently enrolled in this program?
- 1 ☐ Yes, full-time
- 2 ☐ Yes, part-time
- 3 ☐ Not currently enrolled
15. [41] Regardless of whether or not you are now enrolled in an educational program, what is the highest degree you eventually intend to complete? (If you do not plan to continue your education, check the degree you now hold.)
- 1 ☐ Associate's
- 2 ☐ Bachelor's
- 3 ☐ Master's
- 4 ☐ Professional (medicine, dentistry, law, theology)
- 5 ☐ Ph.D.

16. [42-43] If you are enrolled in another program, which of the following categories best describes it:
- 02 ☐ Architecture and Environmental Design
- 04 ☐ Biological Sciences
- 05 ☐ Business and Management
- 06 ☐ Communications
- 07 ☐ Computer and Information Sciences
- 23 ☐ Dentistry
- 08 ☐ Education
- 09 ☐ Engineering
- 15 ☐ English Language and Literature
- 10 ☐ Fine or Applied Arts
- 11 ☐ Foreign Languages
- 12 ☐ Health Professions
- 14 ☐ Law
- 17 ☐ Mathematics
- 24 ☐ Medicine
- 19 ☐ Physical Sciences
- 20 ☐ Psychology
- 21 ☐ Public Affairs and Services
- 22 ☐ Social Sciences
- 98 ☐ Other (please specify) _____

Questions seventeen through thirty focus on your experiences while studying at CUNY.

17. [44] During the time you were studying at CUNY, what is your best estimate of your immediate family's yearly income before taxes?
- 1 ☐ Less than \$4,000
- 2 ☐ \$4,000 - \$7,999
- 3 ☐ \$8,000 - \$11,999
- 4 ☐ \$12,000 - \$15,999
- 5 ☐ \$16,000 - \$19,999
- 6 ☐ \$20,000 - \$23,999
- 7 ☐ \$24,000 - \$27,999
- 8 ☐ \$28,000 - \$31,999
- 9 ☐ \$32,000 and above
18. [45] In the answer you checked above (in Question 17) which family were you referring to?
- 1 ☐ The family in which one of my parents (or guardian) was head of household
- 2 ☐ The family in which I or my spouse was head of household
19. How important was each of the following in helping you pay for college?

	Of Major Importance	Of Minor Importance	Of No Importance
[46] NY State Tuition Assistance Program (TAP)	1 ☐	2 ☐	3 ☐
[47] Basic Educational Opportunity Grant (BEOG or Pell)	1 ☐	2 ☐	3 ☐
[48] Supplemental Educational Opportunity Grant (SEOG)	1 ☐	2 ☐	3 ☐
[49] Stipend from SEEK or College Discovery Program	1 ☐	2 ☐	3 ☐
[50] Guaranteed Student Loan (GSL)	1 ☐	2 ☐	3 ☐
[51] National Direct Student Loan (NDSL)	1 ☐	2 ☐	3 ☐
[52] Employment during the summer	1 ☐	2 ☐	3 ☐
[53] Personal savings	1 ☐	2 ☐	3 ☐
[54] Employment during the school year	1 ☐	2 ☐	3 ☐
[55] Family support or aid	1 ☐	2 ☐	3 ☐
[56] Veterans Benefits from military service	1 ☐	2 ☐	3 ☐
[57] Employer contribution	1 ☐	2 ☐	3 ☐
[58] Scholarships	1 ☐	2 ☐	3 ☐

20. [59] During the time you were at CUNY, were you employed?
- 1 ☐ No
- 2 ☐ Yes, mostly part-time
- 3 ☐ Yes, mostly full-time
- 4 ☐ Combination of full and part-time employment
- 5 ☐ Worked only occasionally
21. [60] What language was spoken in your home when you were studying at CUNY?
- 1 ☐ Only English
- 2 ☐ Both English and another language
- 3 ☐ Primarily another language
22. [61] During your studies at CUNY, did you change your major/program?
- 1 ☐ No PLEASE GO TO QUESTION 23.
- 2 ☐ Yes, first major _____

[62]-[63]

23. Listed below are several aspects of college life. Please indicate how satisfied or dissatisfied you were with each at the time you graduated college. If you never used a particular service, please check the last box.

never used this service _____

very satisfied _____

satisfied _____

dissatisfied _____

very dissatisfied _____

- [64] a. Academic advising 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [65] b. Financial aid counseling 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [66] c. Equipment used in technical and laboratory courses 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [67] d. Instruction in remedial courses 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [68] e. Employment service to help in finding a job while a student 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [69] f. Cooperative education programs 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [70] g. Orientation programs for new students 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [71] h. Services provided by the College Discovery (CD) or SEEK program 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [72] i. Services provided for the handicapped 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐
- [73] j. Career counseling 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

24.

At the time you graduated from college, how satisfied or dissatisfied were you with each of the following? Please check one box for each item.

very satisfied _____

satisfied _____

dissatisfied _____

very dissatisfied _____

- [74] a. Overall quality of classroom instruction 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [75] b. Job possibilities related to my program of study 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [76] c. Material covered in courses 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [77] d. Information on college programs provided at the time of admission 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [78] e. Class sizes 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [79] f. Opportunities to meet with instructors outside of class 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [80] g. Availability of courses in areas that interested me 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [81] h. Helpfulness of staff (clerks, secretaries) in various college offices 1 ☐ 2 ☐ 3 ☐ 4 ☐
- [82] i. Job placement services (recruitment and counseling) 1 ☐ 2 ☐ 3 ☐ 4 ☐

25.

- [83] In which semester did you first enroll in the college from which you graduated?

- 1 ☐ Fall 1979 or later
- 2 ☐ Spring 1979
- 3 ☐ Fall 1978
- 4 ☐ Spring 1978
- 5 ☐ Fall 1977
- 6 ☐ Spring 1977
- 7 ☐ Fall 1976
- 8 ☐ Spring 1976
- 9 ☐ Fall 1975 or earlier

26.

- [84] When you first began at CUNY, were you enrolled full-time (i.e., for 12 or more credits or equated credits)?

- 1 ☐ Yes, full-time
- 2 ☐ No, not full-time

27. [85] While you were a student at CUNY were you enrolled:
- 1 ☐ Only full-time
 - 2 ☐ Mostly full-time
 - 3 ☐ About half full-time
 - 4 ☐ Mostly part-time
 - 5 ☐ Only part-time
28. [86] While you were a student at CUNY, did you interrupt your studies for a semester or longer for any reason?
- 1 ☐ No
 - 2 ☐ Yes
29. [87] Before you entered the college you graduated from, were you a student in any other college?
- 1 ☐ No
 - 2 ☐ Yes, at CUNY
 - 3 ☐ Yes, at a college other than CUNY
30. [88] While you were at CUNY, did you have any handicapped condition that required special services from the college?
- 1 ☐ Yes
 - 2 ☐ No

Before concluding we would like you to provide us with the following information

31. [89] How much formal education do your parents (or guardians) have?
- | Father
[89] | Mother
[90] |
|--|----------------|
| 1 ☐ 1 ☐ 8th grade or less | |
| 2 ☐ 2 ☐ Some high school | |
| 3 ☐ 3 ☐ High school graduate | |
| 4 ☐ 4 ☐ Some college | |
| 5 ☐ 5 ☐ College graduate | |
| 6 ☐ 6 ☐ Post graduate or Professional degree | |
| 7 ☐ 7 ☐ Do not know | |
32. [91] Which of the following ethnic categories best describes you?
- 1 ☐ Puerto Rican
 - 2 ☐ Other Hispanic
 - 3 ☐ Black (non-Hispanic)
 - 4 ☐ White (non-Hispanic)
 - 5 ☐ American Indian
 - 6 ☐ Asian or Pacific Islander
33. [92] Did either you or your parents immigrate to the United States?
- 1 ☐ No
 - 2 ☐ Yes, I did
 - 3 ☐ Yes, both my parents and I did
 - 4 ☐ Yes, one or both of my parents did

34. [93-94] From what country or part of the world did you or your family originally come? (If from more than one place, please check the one to which you feel closest.)

- | | |
|---|---|
| 1 ☐ Africa | 13 ☐ Germany |
| 2 ☐ China | 14 ☐ Greece |
| 3 ☐ Other Asian | 15 ☐ Ireland |
| 4 ☐ Colombia | 16 ☐ Italy |
| 5 ☐ Cuba | 17 ☐ Poland |
| 6 ☐ Dominican Republic | 18 ☐ Russia |
| 7 ☐ Ecuador | 19 ☐ Other European |
| 8 ☐ Haiti | 20 ☐ Other country than above: _____ |
| 9 ☐ Jamaica | |
| 10 ☐ Puerto Rico | |
| 11 ☐ Other Caribbean or Latin American | 21 ☐ Don't know |
| 12 ☐ England, Scotland, or Wales | |

25. What are the religious preferences of you and your parents? (Check one in each column.)

- | [95]
Yours | [96]
Father's | [97]
Mother's |
|----------------------------|----------------------------|---|
| 1 ☐ | 1 ☐ | 1 ☐ Catholic |
| 2 ☐ | 2 ☐ | 2 ☐ Protestant |
| 3 ☐ | 3 ☐ | 3 ☐ Jewish |
| 4 ☐ | 4 ☐ | 4 ☐ No preference |
| 5 ☐ | 5 ☐ | 5 ☐ Other (please specify) |

36. [98] Sex

- 1 ☐ Male 2 ☐ Female

37. [99-100] How old are you?

_____ (years)

38. [101] Marital Status

- 1 ☐ Single
- 2 ☐ Separated, Divorced
- 3 ☐ Widowed
- 4 ☐ Married

39. [102] How many dependent children do you have living with you at this time?

- | | |
|---------------------------------|---|
| 1 ☐ None | 4 ☐ Three |
| 2 ☐ One | 5 ☐ Four |
| 3 ☐ Two | 6 ☐ Five or more |

40. [103-104] On a scale of 1 (for poor) to 10 (for excellent), how would you rate your chances for future occupational success? (Please circle your choice.)

1	2	3	4	5	6	7	8	9	10
+-----+									
poor			average				excellent		

[105-106]

A4

Thank you for your cooperation. Now please place the completed questionnaire in the return envelope and mail (no postage required) as soon as possible.

TABLE B1

Self-Reported Background Characteristics of On-Time and Delayed June 1981
Graduates with Associate Degrees, Three Curricula Combined

DEMOGRAPHIC VARIABLES	Plus-four+ (N=91)		Plus-three (N=43)		Plus-two (N=106)		Plus-one (N=247)		On-Time (N=180)	
	N	%	N	%	N	%	N	%	N	%
Sex: Male	36	39.6	15	34.9	37	34.9	97	39.4	74	41.1
Current Marital Status:										
Single	28	30.8	14	32.6	59	56.2	168	68.0	139	77.2
Separated/Divorced/Widow	14	15.4	6	14.0	16	15.2	24	10.5	14	7.8
Married	49	53.8	23	53.5	30	28.6	53	21.5	27	15.0
Number dependent children:										
None	49	54.4	23	54.8	62	59.0	162	65.6	138	77.5
One/two	34	37.7	14	33.3	35	33.3	60	24.3	31	17.4
Three/four	7	7.8	5	11.9	8	7.7	20	8.1	8	4.5
Five or more	0	-	0	-	0	-	5	2.0	1	0.6
Ethnicity:										
Puerto Rican	6	6.6	4	9.3	6	5.8	20	8.1	11	6.1
Other Hispanic	4	4.4	6	14.0	9	8.7	17	6.9	11	6.1
Black	28	30.8	9	20.9	38	36.5	69	27.9	29	16.1
White	50	54.9	21	48.8	44	42.3	129	52.2	118	65.6
Other	3	3.3	3	7.0	7	6.8	12	4.9	11	6.1
Immigrant status:										
None immigrant	51	56.7	19	44.2	52	50.0	133	53.8	114	64.0
Self/Self & Parents	22	24.5	15	34.9	34	32.7	65	26.3	33	18.5
One/both parents	17	18.9	9	20.9	18	17.3	49	19.8	31	17.4
Religious Preference:										
Catholic	48	55.8	26	61.9	49	49.5	118	51.3	90	53.6
Protestant	24	27.9	5	11.9	20	20.2	41	17.8	28	16.7
Jewish	3	3.5	2	4.8	8	8.1	23	10.0	25	14.9
No preference	9	10.5	7	16.7	16	16.2	26	11.3	23	13.7
Other	2	2.3	2	4.8	6	6.1	22	9.6	2	1.2
Handicapping Condition:										
Yes	3	3.3	2	4.7	4	3.8	8	3.2	4	2.2
Father's education:										
8th grade or less	25	29.4	7	16.7	22	22.7	54	23.1	28	16.3
Some high school	10	11.8	17	40.5	23	23.7	41	17.5	29	16.9
High school graduate	27	31.8	12	28.6	25	25.8	68	29.1	52	30.2
Some college	9	10.6	1	2.4	11	11.3	32	13.7	26	15.1
College graduate	3	3.5	4	9.5	6	6.2	9	3.8	15	8.7
Post grad/professional	1	1.2	1	2.4	3	3.1	12	5.1	13	7.6
Don't know	10	11.8	0	-	7	7.2	18	7.7	9	5.2
Mother's education:										
8th grade or less	19	21.1	15	34.9	29	28.4	66	26.8	28	15.7
Some high school	20	22.2	12	27.9	19	18.6	46	18.7	22	12.4
High school graduate	31	34.4	10	23.3	29	28.4	84	34.1	82	46.1
Some college	11	12.2	3	7.0	13	12.7	20	8.1	21	11.8
College graduate	2	2.2	2	4.7	5	4.9	16	6.5	14	7.9
Post grad/professional	1	1.1	0	-	4	3.9	2	0.8	5	2.8
Don't know	6	6.7	1	2.3	3	2.9	12	4.9	6	3.4
Language at "Home":										
English only	70	76.9	25	58.1	73	68.9	170	69.1	133	73.9
English plus	19	20.9	11	25.6	22	20.8	57	23.2	41	22.8
Another	2	2.2	7	16.3	11	10.4	19	7.7	6	3.3

APPENDIX B

SUPPLEMENTARY DATA ANALYSES: by date of entry across curriculum

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TABLE B2

Self-Reported Demographic Attributes and College-Going Experiences of On-Time and Delayed June 1981 Graduates with Associate Degrees, Three Curricula Combined

COLLEGE-GOING VARIABLES	Plus-four + (N=91)		Plus-three (N=43)		Plus-two (N=106)		Plus-one (N=241)		On-time (N=180)	
	N	%	N	%	N	%	N	%	N	%
At CUNY, "Family" Income:										
\$ 4,000/ <	7	8.1	5	12.5	12	11.9	25	10.3	11	6.4
4,000-7,999	5	5.8	3	7.5	20	19.8	40	16.5	23	13.5
8,000-11,999	10	11.6	5	12.5	25	24.8	37	15.2	19	11.1
12,000-15,999	13	15.1	9	22.5	14	13.9	34	14.0	21	12.3
16,000-19,999	11	12.8	3	7.5	8	7.9	33	13.6	27	15.8
20,000-23,999	10	11.6	4	10.0	10	9.9	27	11.1	21	12.3
24,000-27,999	5	5.8	2	5.0	3	3.0	10	4.1	19	11.1
28,000-31,999	11	12.8	6	15.0	2	2.0	17	7.0	5	2.9
\$32,000/ >	14	16.3	3	7.5	7	6.9	20	8.2	25	14.6
"Family" defined:										
Parents	19	22.9	12	30.0	47	47.0	145	60.2	123	72.8
Self/Spouse	64	77.1	28	70.0	53	53.0	95	39.4	46	27.2
Attend college before:										
No	73	81.1	34	79.1	88	83.0	193	78.5	128	71.5
Yes, CUNY	8	8.9	7	16.3	9	8.5	30	12.2	31	17.3
Yes, non-CUNY	9	10.0	2	4.7	9	8.5	23	9.3	20	11.2
First enrollment										
Full-time	27	29.7	23	53.5	81	76.4	208	84.2	163	90.6
Part-time	64	70.3	20	46.5	25	23.6	38	15.4	17	9.4
Enrollment Pattern:										
Only full-time	4	4.4	8	18.6	53	50.0	168	68.0	139	77.2
Mostly full-time	15	16.5	9	20.9	33	31.1	58	23.5	28	15.6
Half full-time	16	17.6	11	25.6	8	7.5	8	3.2	5	2.8
Mostly part-time	20	22.0	8	18.6	8	7.5	7	2.8	4	2.2
Only part-time	36	39.6	7	16.3	4	3.8	6	2.4	4	2.2
Interrupted Study:										
No	18	19.8	25	58.1	64	60.4	215	87.0	160	89.4
Change Major:										
No	54	59.3	27	62.8	73	68.9	186	75.3	155	86.1
Relation of current Job to Major (Mean)	(3.14)		(3.27)		(2.99)		(2.99)		(2.88)	
Directly	30	42.9	11	36.7	42	53.9	84	51.5	57	52.3
Mostly	9	12.9	6	20.0	9	11.5	21	12.9	17	15.6
Somewhat	20	28.6	7	23.3	11	14.1	33	20.2	24	22.0
Not at all	11	15.7	6	20.0	16	20.5	25	15.3	11	10.1
Employment Pattern:										
Not employed	15	16.4	8	18.6	28	26.4	55	22.3	39	21.7
Mostly part-time	13	14.3	13	30.2	39	36.8	98	39.8	85	47.2
Mostly full-time	52	57.1	17	39.5	25	23.6	41	16.7	24	13.3
Full-time & part-time	9	9.9	3	7.0	6	5.7	25	10.2	10	5.6
Occasional	2	2.2	2	4.7	8	7.5	27	11.0	22	12.2

TABLE B3

Important Sources of Financial Aid and Satisfactory College Services for On-Time and Delayed June 1981 Graduates with Associate Degrees, Three Curricula Combined

COLLEGE COSTS, IMPORTANT FACTORS ^a	Plus-four + (N=91)	Plus-three (N=43)	Plus-two (N=106)	Plus-one (N=247)	On-time (N=180)
	Mean	Mean	Mean	Mean	Mean
TAP	2.44	2.05	1.51	1.68	1.78
BEOG/Pell	2.35	1.92	1.62	1.75	1.89
SEOG	2.85	2.70	2.75	2.63	2.83
SEEK/CD	2.97	2.83	2.80	2.84	2.94
GSL	2.86	2.38	2.46	2.51	2.65
NDSL	2.85	2.52	2.58	2.66	2.75
Summer jobs	2.55	2.39	2.08	2.03	1.95
Personal savings	1.90	1.89	1.90	2.04	2.05
School year jobs	1.74	1.58	1.77	1.81	1.88
Family support	2.44	2.23	1.99	1.84	1.89
Veterans benefits	2.81	2.83	2.89	2.89	2.86
Employer Contributions	2.35	2.50	2.85	2.89	2.90
Scholarships	2.96	2.76	2.80	2.81	2.76
COLLEGE LIFE, SATISFACTION ^b					
Academic Advis.	2.74	3.04	2.86	3.00	2.86
Fin. Aid Coun.	2.62	2.82	2.80	2.76	2.63
Equipment	3.06	3.05	3.15	3.12	3.09
Remedial Instr.	3.20	2.96	2.88	3.03	3.02
Employ. Serv.	1.75	2.50	2.52	2.70	2.50
Co-op. Educ.	2.31	2.50	2.59	2.88	2.80
Orientation	2.52	2.72	2.68	2.71	2.90
CD/SEEK	1.60	3.67	2.44	3.07	2.57
Service for Handicapped	2.33	1.00	2.33	2.71	2.93
Career Counseling	2.60	2.85	2.62	2.75	2.62
^a The <u>higher</u> the mean score, the <u>less</u> important the financial aid. ^b The <u>higher</u> the mean score, the <u>more</u> satisfactory the quality of the service.					

TABLE B4

After Graduation Activities of On-Time and Delayed June 1981
 Graduates with Associate Degrees, Three Curricula Combined

CURRENT EMPLOYMENT/ EDUCATION STATUS	Plus-four+ (N=91)		Plus-three (N=43)		Plus-two (N=106)		Plus-one (N=247)		On-time (N=180)	
	N	%	N	%	N	%	N	%	N	%
Presently:										
Working full-time	71	78.0	30	69.8	78	73.6	163	66.3	109	60.6
Working part-time	6	6.6	5	11.6	8	7.5	37	15.0	32	17.8
Not working	14	15.4	8	18.6	20	18.9	46	18.7	39	21.7
Job search time:										
Had job	52	73.2	18	62.1	30	38.5	47	28.8	30	27.0
2 mos. or less	14	20.0	5	17.2	36	46.2	74	45.4	52	48.1
3-6 mos.	3	4.3	3	10.3	10	12.8	23	14.1	16	14.8
7 or more mos.	1	1.4	3	10.3	2	2.6	19	11.7	10	9.3
How long employed:										
1 year	12	19.0	8	36.4	29	47.5	55	49.5	38	55.1
1-2 years	5	7.9	1	4.5	13	21.3	26	23.4	16	23.2
2-5 years	13	20.6	6	27.3	16	26.2	21	18.9	7	10.1
5-10 years	15	23.8	5	22.7	1	1.6	6	5.4	4	5.8
More than 10 years	18	28.6	2	9.1	2	3.3	3	2.7	4	5.8
Potential:										
Definite	26	37.1	12	40.0	33	42.9	60	37.0	45	41.7
Possible	26	37.1	10	33.3	30	39.0	65	40.1	44	40.7
Little/None	16	22.9	4	13.3	7	9.1	15	9.3	12	11.1
Temporary	2	2.9	4	13.3	7	9.1	22	13.6	7	6.5
Annual Gross Salary:										
Mean	\$19,662		\$16,036		\$16,563		\$15,173		\$15,004	
Median	\$18,875		\$15,000		\$17,308		\$14,861		\$14,692	
Reason not working:										
In-school full-time	5	33.3	2	27.3	10	45.5	34	64.2	34	75.6
Can't find	6	40.0	3	27.3	3	13.6	8	15.1	4	8.9
Gave up	0	-	1	9.1	1	4.5	3	5.7	2	4.4
Ill/disabled	1	6.7	0	-	2	9.1	1	1.9	0	-
Laid off	1	6.7	0	-	1	4.5	2	3.8	0	-
Family responsibility	1	6.7	3	27.3	3	13.6	2	3.8	4	8.9
Other	1	6.7	1	9.1	2	9.1	3	5.7	1	2.2
Continued education after graduation:										
No	43	48.9	23	53.5	50	48.1	112	46.3	80	45.2
CUNY, BA	22	25.0	13	30.2	32	30.8	79	32.6	58	32.8
BA, non-CUNY	15	17.0	4	9.3	17	16.3	35	14.5	29	16.4
Graduate, CUNY	0	-	0	-	0	-	0	-	0	-
Graduate, non-CUNY	0	-	0	-	1	1.0	1	0.4	4	2.3
Other	8	9.1	3	7.0	4	3.8	15	6.2	6	3.4
Currently enrolled:										
Yes, full-time	10	20.8	7	14.3	26	48.1	65	47.8	61	62.9
Yes, part-time	28	58.3	11	52.4	16	29.6	37	27.2	25	25.8
No	10	20.8	7	33.3	12	22.2	34	25.0	11	11.3
Highest Degree Sought:										
Associate	5	9.4	2	8.7	4	6.8	6	4.3	3	2.9
Bachelor	21	39.6	8	34.8	14	23.7	47	33.3	40	38.8
Master's	22	41.5	10	43.5	36	61.0	72	51.1	39	37.9
Professional	1	1.9	0	-	1	1.7	6	4.3	12	11.7
Ph.D.	4	7.5	3	13.0	4	6.8	10	7.1	9	8.7

TABLE B5

Selected Information from Transcripts of June 1981 Graduates with Associate Degrees and of Cohorts from Three Years, Three Curricula Combined

TRANSCRIPT VARIABLES	Spring 76 or earlier		Fall 76- Spring 77		Fall 77- Spring 78		Fall 78- Spring 79		Fall 79 or later						
	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts	81 grads	co- horts					
N transcripts	13	0	14	120	41	115	64	95	47	0					
% graduated	100.0	-	100.0	25.8	100.0	3.5	100.0	5.3	100.0	-					
Sex (% Male)	61.5	-	53.8	57.0	33.3	54.4	24.6	52.2	-	-					
Age: Mean	31.3	-	28.7	24.5	25.1	23.0	22.6	21.8	22.1	-					
Median	31.2	-	28.4	24.6	25.0	23.0	21.7	20.6	22.0	-					
High School Program:															
% Academic	50.0	-	58.3	72.7	80.6	71.0	79.2	59.4	65.4	-					
% Vocational/Technical	50.0	-	25.0	23.9	19.4	27.7	16.6	21.7	26.9	-					
% GED	0	-	16.7	3.4	0	1.3	4.2	18.9	7.7	-					
Address Change (% yes)	0	-	14.3	4.2	7.3	3.5	4.7	0	2.1	-					
Change of major (% yes)	23.1	-	21.4	10.8	4.9	4.4	12.5	7.4	2.1	-					
% Enrolled in 4 semesters, in-sequence	61.5	-	85.7	54.2	90.2	42.6	100.0	37.9	95.7	-					
Average N courses passed:															
4 in-sequence	11.1	-	15.9	12.7	17.9	13.5	15.6	11.4	16.0	-					
4 not-in-sequence	7.6	-	14.0	5.2	12.5	4.6	0	4.9	16.0	-					
Average N withdrawals:															
4 in-sequence	1.9	-	1.3	1.7	1.0	2.3	0.8	3.0	0.3	-					
4 not-in-sequence	3.6	-	2.5	2.2	3.3	2.7	0	2.5	1.0	-					
Average N courses failed:															
4 in-sequence	0.3	-	0.6	1.6	0.4	1.6	0.5	1.5	4.1	-					
4 not-in-sequence	0.4	-	1.0	2.1	0	1.4	0	1.5	0	-					
	81 grads	G	NG	81 grads	G	NG	81 grads	G	NG	81 grads	G	NG			
Average N semesters enrolled in courses	11.9	-	-	9.4	4.9	3.7	8.0	5.8	3.8	8.8	8.4	3.5	5.1	-	-
Average N semesters missed in sequence	2.8	-	-	0.7	0.6	0.2	0.2	0	0.2	<.1	0	0.3	<.1	-	-
Average N probations	0	-	-	1.5	0.1	0.9	0.4	0	0.7	0.2	0.4	0.8	0	-	-
Average N dismissals	0	-	-	0.3	<.1	0.3	0.1	0	0.3	<.1	0	0.2	0	-	-
Average N honors	0.2	-	-	0.3	0.5	0.1	0.1	1.2	0.1	0.6	0	<.1	1.3	-	-

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